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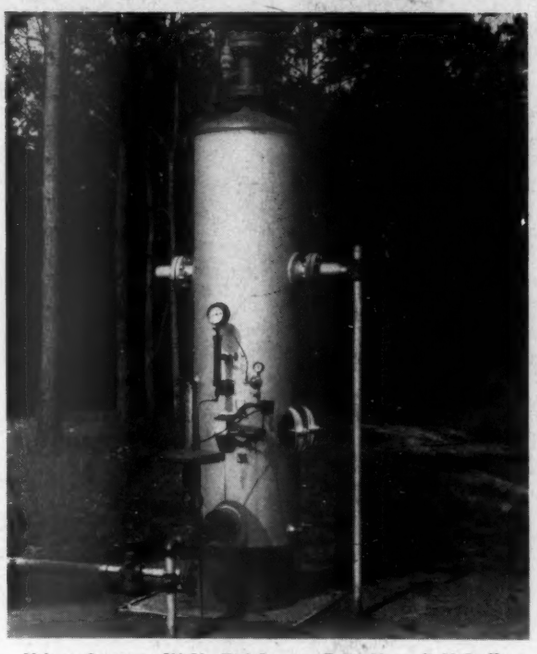
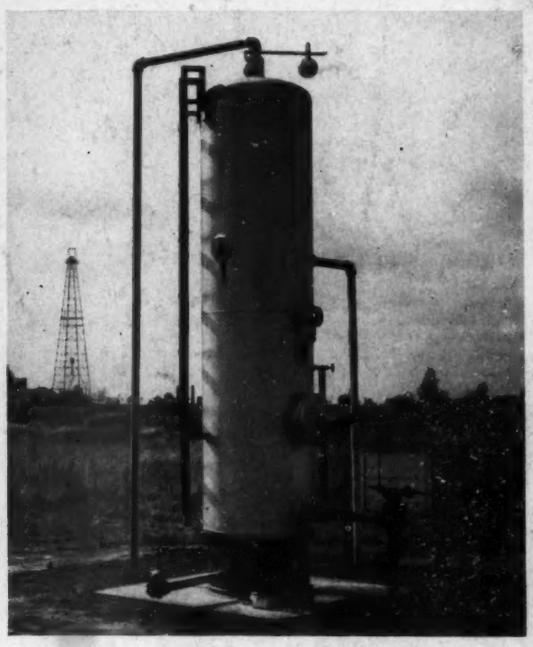


Maloney Separator, 500-Lb. High-Pressure Type, Means & McGeeHee, Eureka Pool, Texas



Maloney Separator, 125-Lb. Low-Pressure Type, H. F. Alexander, Hastings, Texas

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There's no easier way to make money than by careful buying. For example, the extra-high efficiency of the MALONEY Separator earns several dollars for the owner *every day* of operation—and its heavy durable materials and correct construction insure long life and efficient service.

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2. Combination mechanical-hydraulic type; introduced by Owen and owned by Halliburton.
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DUNCAN, OKLAHOMA

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BAKER'S 12 POINT CHECK CHART FOR FLOATING EQUIPMENT

CHECK the Basic Features You Want in Floating Equipment; Then See How Many of These "Must" Features You Secure When You Specify BAKER

. . . and DON'T OVERLOOK the "Plus Values," those Semi-Intangible Factors that mean So Much to Busy, Modern Operators.

	DESIRABLE FEATURES IN FLOATING EQUIPMENT, OR "MUST HAVE"	BAKER FLOATING EQUIPMENT PROVIDES FEATURES CHECKED BELOW	CHECK BELOW THE FEATURES *YOU* WANT IN FLOATING EQUIPMENT
1	STRENGTH	✓	
2	SAFETY	✓	
3	AMPLE CIRCULATION PASSAGEWAYS	✓	
4	POSITIVE, LEAK-PROOF BACK-PRESSURE VALVE	✓	
5	EASY DRILLABILITY	✓	
6	THREADED CONNECTION TO FIT *ANY* TYPE CASING	✓	
7	UNIFORMITY	✓	
	"PLUS VALUES"		
8	SERVICE	✓	
9	CONVENIENTLY LOCATED STOCKS	✓	
10	BACKGROUND OF EXPERIENCE	✓	
11	CONSTANT IMPROVEMENT IN DESIGN AND MATERIALS	✓	
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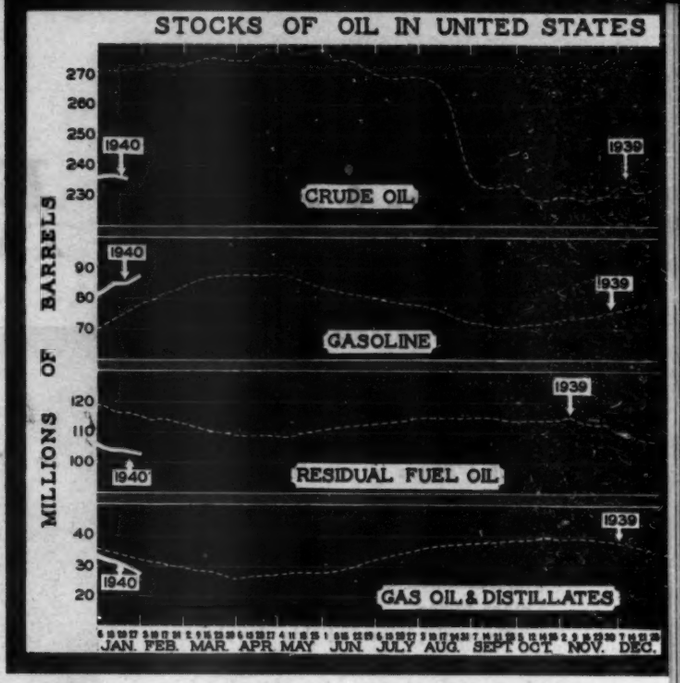
Trends

Devonian Output in Illinois Is To Have Market Significance



AT the close of the first month of the new year it becomes increasingly apparent that Illinois again occupies the most important position in determining trends in the industry's markets over the next few months. The latter part of last year it was believed that Illinois would shortly reach its peak production, would level off for a time, and then start a decline which would mean that the state would not be the disturbing factor in 1940 operations that it was in 1939.

CRUDE PRODUCTION *3,641,308 bbl. daily average — down 3,284 bbl. One year ago 3,251,779 bbl.*

CRUDE STOCKS *237,571,000 bbl. as of January 20 — down 678,000 bbl. One year ago 271,110,000 bbl.*

GASOLINE STOCKS *87,914,000 bbl. as of January 27—up 2,034,000 bbl. One year ago 78,210,000 bbl.*

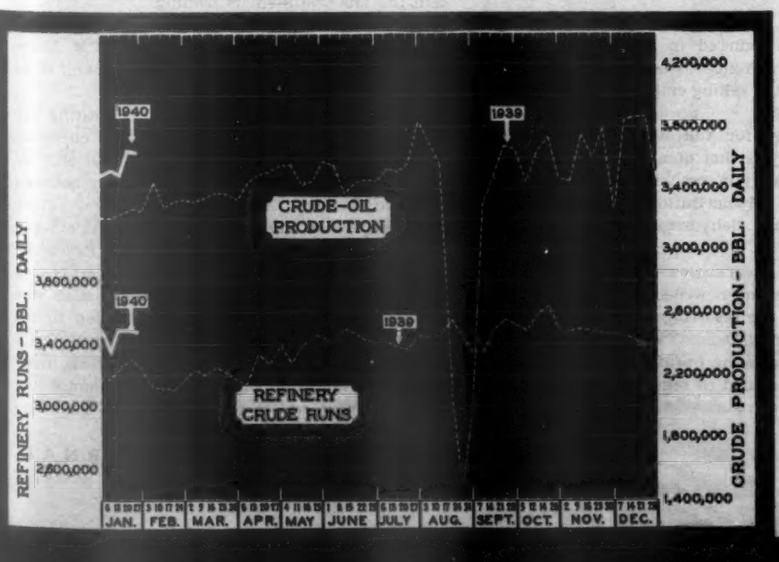
RESIDUAL FUEL-OIL STOCKS *103,015,000 bbl. as of January 27—down 1,567,000. One year ago 116,450,000 bbl.*

GAS OIL AND DISTILLATES *27,407,000 bbl. as of January 27—down 1,481,000. One year ago 32,933,000 bbl.*

REFINERY RUNS *3,470,000 bbl. daily week ended January 27 — down 40,000 bbl. One year ago 3,235,000 bbl.*

The discovery of prolific Devonian production has changed that outlook. It is now conceded that large production from this new horizon must be absorbed soon. With approximately 100 wells drilling for the Devonian it is believed that the total production of the state will reach 400,000 bbl. daily in the near future and continue at that level, or higher, for a period whose length cannot be determined at this time.

No aid is to be expected through the enactment of a conservation act, favored by operators having the bulk of the production. It is now stated that a special session of the legislature to consider the needed legislation will not be called before the primary election in April, and the postponement policy of the past several months has led many to conclude that a conservation act will not be considered until next regular session of the legislature, which will meet in 1941.


REFINERY RUNS - BBL. DAILY
CRUDE PRODUCTION - BBL. DAILY
CRUDE-OIL PRODUCTION
REFINERY CRUDE RUNS
1940
1939
JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC.

This in effect means any control over the forthcoming increased production of the state will come from voluntary action of the producers and pipe-line companies. The largest operator in the state, with a production of 140,000 bbl. at this time, will have a production of approximately 200,000 bbl. daily in a few weeks unless means are devised to retard development. Part of the state's increased output will come from small operators who do not have adequate outlets at posted prices for all of their present output. While pipe-line capacity is much greater than it was a year ago, with important additions under way, it is not sufficient to transport all the crude now being produced.

This situation has been reflected in several recent changes in the movement of crude oil. A large Atlantic seaboard refinery is now getting approximately 15,000 bbl. daily of Illinois crude by pipe line. It is said that other eastern and Canadian refiners will increase their purchases as additional pipe-line and water transportation becomes available. The scarcity of tankers for coastwise movement, with rates of 70 cents per barrel against a pipeline charge from Illinois to eastern points of 30 to 40 cents per barrel, is a factor. Trades were recently reported in which eastern crude supplies, formerly furnished by Texas, Oklahoma, and Kansas fields, are now shipped from Illinois. Despite these developments and the fact that gasoline markets continue weak, the crude market generally is tight at this time.

DAILY AVERAGE PRODUCTION FOR WEEK

	Jan. 27, 1940	Bur. Mines Jan. est. of demand	Jan. state allowable	Jan. 20, 1940
Oklahoma City	100,100			103,000
Seminole fields	40,400			39,400
Remainder of state	289,625			281,025
Total Oklahoma	430,125	433,900	433,900	423,425
East Texas	394,388			394,495
West Texas	243,060			242,547
North Central Texas	112,648			112,390
Texas Panhandle	82,609			80,486
East Central Texas	82,000			81,209
Gulf Coast Texas	354,186			353,419
Southwest Texas	97,995			93,082
Total Texas	1,366,884	1,411,000	1,376,320	1,357,628
North Louisiana	69,700			69,325
Gulf Coast Louisiana	203,697			201,400
Total Louisiana	273,397	254,200	268,192	270,725
California	611,750	593,900	599,000	618,250
Kansas	167,750	160,600	160,000	176,650
Arkansas	69,900	59,700	70,000	70,720
Mississippi	4,600			3,200
Eastern fields	103,200	100,700		101,000
Illinois	357,118	314,800		366,931
Michigan	63,824	61,000		64,623
New Mexico	102,930	101,900	101,900	101,720
Rocky Mountain area	89,830	78,000		89,720
Total United States	3,641,308	3,569,700		3,644,592

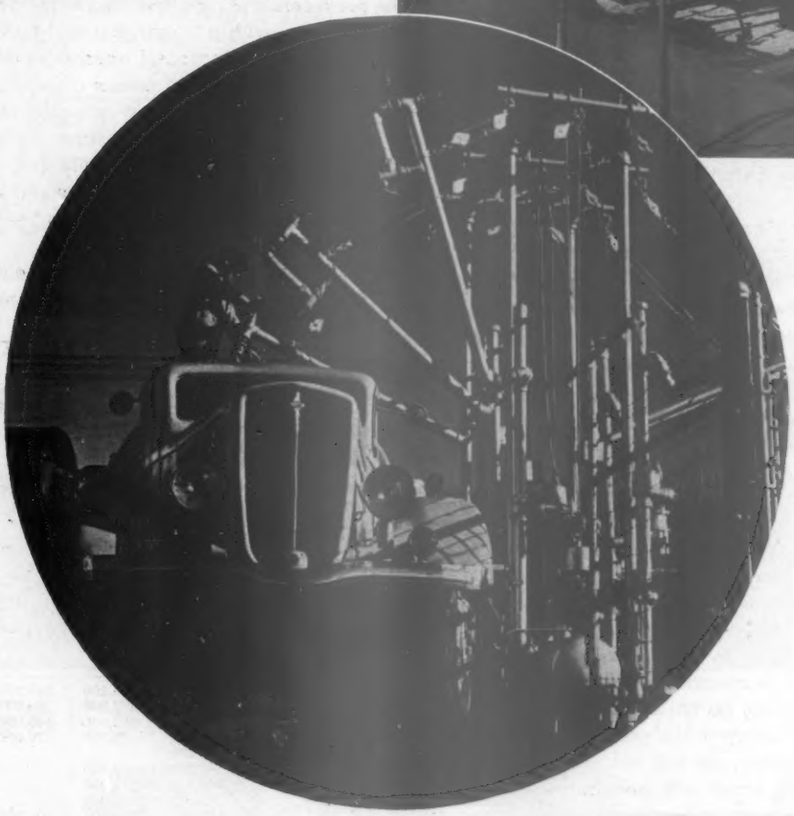
Octane Race Spreads

By H. STANLEY NORMAN

Competition in regard to gasoline quality currently termed the "octane race" which started in the eastern part of the United States is spreading rapidly to other sections. It is a reflection in part of new refinery processing, particularly the advent of catalytic cracking. The liberalization of ethyl licensing is another factor.

Several phases of this development which, because of direct relation to marketing practices and profits, is of importance to all branches of the industry, are discussed in accompanying article.

Alkylation plant of the Humble Oil & Refining Co., at Baytown, Tex., which is devoted to the production of high-octane aviation gasoline



In retail selling, direct reference to octane is usually avoided. All selling emphasis is now being directed to performance

NEW YORK, Jan. 30.—Refiners are entering an era in which construction of equipment to utilize the newer processes is a competitive necessity. The octane ceiling, even by use of the maximum of 3 cc. of lead per gallon, has been reached by some refiners in meeting or approaching today's competition. The only step open, unless the refiner in such position is willing to participate only in the market for inferior motor fuel, is to weave one or more of the newer processes into his operating procedure.

A substantial increase in the octane rating of domestic motor fuels has occurred during the past 2 or 3 months despite the disparity between the results obtainable by various methods currently in use. Partly because of the wide differences reflected by the motor-fuel rating methods changes have occurred in selling technique by which direct reference to octane is meticulously avoided, All retail selling emphasis is now directed to performance.

Responsibility for the upward movement of gasoline quality is that of new refining methods, particularly catalytic cracking, but also including alkylation, polymerization, isomerization, catalytic reforming, dehydrogenation, and hydrogenation.

In meeting competitive conditions in some areas and in setting new high standards in others many refiners are resorting to greater concentrations of tetraethyl lead. Two of the largest refining interests in the business have doubled the tetraethyl lead added to regular gasoline in parts or all of their territories.

Even by doubling previous lead content, the volume used is still below the permissible limits, leaving a margin for further advances without compulsion to install new equipment for raising the quality of virgin stocks.

The factors of economy and time remain the dominant considerations in determining whether to use greater quantities of lead or to install equipment which will give the same results.

As usual, the East Coast, including the Gulf territory, is leading the field in the current climb to higher octane standards. The Pacific Coast is second from a standpoint of average octane, the Middle West is just now getting into the swim and the Mid-Continent is trailing.

On the East Coast regular gasoline now ranges between 72.5 and 75 octane by the A.S.T.M. Motor Method, while premium fuel ranges around 80 to 81 octane by the same standard.

By the 1939 "Research Method" of testing motor fuels much of the regular gasoline currently available on the East Coast rates 78 to 80.5 octane, indicating the range of discrepancy between the two methods. A premium of 4 to 7 octane numbers is the range earned by fully cracked fuels when tested by the 1939 "Motor Research" method over the A.S.T.M. motor procedure. The advantage of the research method over the A.S.T.M. system is reduced in proportion to the straightrun gasoline blended becoming practically negligible under certain conditions, which, however, are not symbolic of modern motor-fuel manufacturing practices. There seems to be no

determinable favor extended to either of the three currently used methods of testing motor fuel. By common designation they are: A.S.T.M. motor, L-3 and 1939 research. Common practice on an intercompany basis seems to depend largely upon the type of fuel manufactured and the method of test which shows the individual's product to the best advantage.

Seek Satisfactory Test Method

Technicians are searching for some method of test which will be a compromise between the A.S.T.M. motor and the 1939 research procedures by which the undesirable features of both can be eliminated without sacrificing the desirable factors of either. When Ethyl Gasoline Corp.'s L-3 test method was introduced it was thought that such a compromise had been reached, but this has been proved to be not the case.

Basically, the difficulty with the A.S.T.M. method is that it fails to reflect full value of motor fuels containing substantial quantities of cracked gasoline. Conversely, the 1939 research method is claimed to give exaggerated results for the 100 per cent cracked fuels and a proportionately depressed determination for products basically straightrun.

The fact is that the best regular motor fuels currently marketed on the East Coast are not as superior in octane rating as some have been led to believe when examined in light of older test methods. On the other hand, the gasoline is sufficiently superior to that available as recently as 3 or 4 months ago to forecast and bring near to hand revolutionary changes.

Probably because any designation of today's motor fuel by specific octane number would require a qualifying and involved explanation as to what method of test was used, substantial changes have occurred in sales-promotion tactics. Emphasis is placed on quality and appeals are directed to buyers interested in performance. With few exceptions, East Coast refiners and marketers have introduced "new gasolines" during the past few months. Some have new equipment furnishing the "super" portion of the superfuels. Others have attained their claims to "new gasolines" by blending .75 to 1 cc. of additional tetraethyl lead or by a combination of both methods.

There is hardly any doubt in the minds of refinery and automotive engineers that the climb to substantially improved motor fuels will continue and none can accurately forecast the ceiling, certainly not short of the 95 and 100-octane "gold standard" gasolines now used exclusively in the heavy-duty phases of aviation. Superior speeds or load-carrying performances in aviation are the only commercial services utilizing the best fuels the petroleum refining industry is qualified to produce at the present time.

The comparatively light consumption of super aviation fuels was strikingly illustrated in the Bureau of Mines' first monthly statement on aeronautical gasoline production. The weighted average of aviation motor fuels reported to the bureau was 84 octane (A.S.T.M.) and the range was from about 70 to 100. The weighted average of 84 octane was lower than expected, indicating that a large number of relatively low-compression motors are still in use both here and abroad. The vapor pressure of most of the aviation gasolines was 7.0 lb., but the weighted average was 6.6 lb.

The bureau's aviation gasoline report, recognized as incomplete, is considered a condition rather than a trend. The newer planes are being equipped to take full advantage of the super fuels becoming available in increasing quantity. In fact, new refinery equipment recently placed in service, under construction, in design, and definitely planned will place the petroleum industry in position to manufacture about four times as much 100-octane gasoline as the aviation industry now consumes of all grades.

The surplus of super fuels will find their market outlet in the field of automobile transportation, indicating that gasoline available to the average motorist will be substantially superior within 1 or 2 years. The surplus of super fuels, over and above consumption by the aviation industry, will go into commerce as blending material for straightrun and natural gasoline along with antiknock compounds to again elevate the overall quality of automotive engine fuel.

One authority has predicted that regular automobile fuels will range from 95 to 100 octane within 5 years. Other technicians are less optimistic but agree that such an era is in store for the petroleum and automotive industries within a decade.

Compression Ratio Increasing

Research is progressing rapidly on compression ratios of 8, 10, and even 11 to 1, as contrasted to current use of approximately 6 to 1 in automobile engines. Supercharging appears to be the next major change in store for the automotive and petroleum industries. In this connection it is interesting to examine some of the conclusions reached by laboratory research as reported by Dr. Graham Edgar.

"An eight-cylinder engine," reports Dr. Edgar, "was supercharged, and full tests were made of its power and efficiency under a variety of conditions.

"It is evident that the supercharged (10 in. of mercury) engine delivers a maximum horsepower nearly twice that of the unsupercharged engine. The octane number increases necessary to prevent knock in this engine at varying amounts of supercharge are given below:

C.F.R. MOTOR-METHOD OCTANE NUMBER OF LEAD-TREATED REFERENCE FUEL WHICH PRODUCED INCIPIENT KNOCK AT 1,000 R.P.M. WITH 1 COMPRESSION RATIO

Abs. intake manifold pressure, in. hg.	Octane No. at carburetor air temp. of:		
	80°F.	120°F.	170°F.
29.0	78-80	77-79	80-81
30.0	81-83	79-81	82-83
32.0	84-86	83-84	84-86
34.0	87-89	85-87	86-87
36.0	88-89	87-89	....
38.0	89-90	....	....
39.0	90-91	....	....

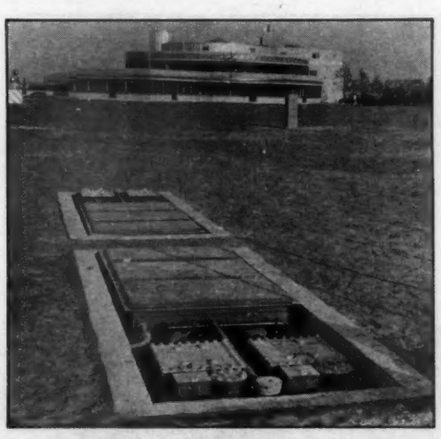
"Thus, with 10 or 12-octane-number improvement in the fuel, it is possible almost to double the horsepower by supercharging."

As a further consideration in the future quality of motor fuel, Dr. Edgar has reported that mixtures of lead alkyls are already known which possess advantages over tetraethyl lead. Under certain conditions these advantages amount to an average of the order of 15 per cent. High-compression automobile engines will require many changes, probably in valves, manifolds, and carburation, but the problems are certainly no greater than those solved in the past few years.

The question has been asked frequently, "What position will anti-knock compounds occupy in light of process developments by which super fuels can be obtained in virgin state?"

Indications are that changes in respect to anti-knock-compound use will be minor on a long-term basis. First, the compounds will be used so long as they offer the most economical means of attaining the desired octane rating. Second, the compounds will continue to offer a means of making even the best virgin fuels even better.

Currently alkylation, catalytic re-forming and catalytic polymerization appear to be enjoying greatest favor from a numerical standpoint.



Above: One of the refueling pits at La Guardia Field, New York City's new airport

Right: The Standard Oil Co. of Indiana, in recognition of the "octane race" which is spreading in its territory, interrupted its regular advertising schedule and ran this advertisement in 64 Sunday newspapers of the Middle West on January 28. Statements in the advertisement reflect several phases of the competitive situation with regard to gasoline quality

Standard Oil
Restates its Policy of
Product Leadership

TO THE MILLIONS of car owners using Standard Oil products, and to the thousands of independent Standard Oil Dealers who serve them, we say: "It is our unwavering policy that Standard Oil products will not be excelled in all-around quality, for their purpose, at their price."

That is a strong statement. And every car owner has a right to know exactly what we mean by it—how we apply it to the quality of Standard Gasoline, for instance, and what safeguards of rigid policy make it something he can depend on.

TO ANTICIPATE YOUR NEEDS . . .

Standard Oil technicians are making and testing gasolines so high in knock rating, for example, that cars which can employ them practically and economically may not be in use for years to come.

The performance of your car on various types of gasoline was known to these men before it was made. The Standard Red Crown available now at all Standard Oil Dealers is balanced to satisfy most economically all of the needs of most of the cars on the road today. If your need is for low fuel cost at a reasonable sacrifice in performance (generally unnoticeable in the older cars) economical Standard will be found most satisfactory. If the ultimate in performance is desired, or if your engine is of unusually high compression, Solite is a perfect answer.

Actual refinery production is so controlled by tests that the gasolines available to you at Standard Oil Dealers are always ahead of the requirements of your car.

"BALANCED" QUALITIES PROTECT YOUR PARTS

Good gasoline possesses a combination of qualities... those that give you quick-starting and warm-up, those that give you mileage and capacity power, and those that have come to be known as "anti-knock." Anti-knock alone never ran a motor car! It is simply an absence of trouble.

Too much of one quality at the expense of other desirable qualities creates an inefficient, expensive gasoline, wherever its price.

Standard Red Crown is held in balance, measured as anti-knock from time to time, so that the big majority of cars can use it economically. Red Crown was just recently given higher anti-knock as an increase in price and without the slightest sacrifice of quick-starting or mileage-making qualities.

EXPERIMENTS WITHOUT ANSWERS ARE KNOWN QUALITY

Standard Oil Engineers are constantly testing all leading brands of gasoline—in their laboratories and on the road. They are, and will continue to be, sticklers on keeping Red Crown unexcelled among "regulars" in all-around performance.

A company with its roots so deep, and its service to the public so far-reaching, cannot in definite burden of leadership, its service as well as its product quality.

SPARKS . . . FROM THE NEWS

LISBON LOOKS UP: A new lease on life has been given the Lisbon field in North Louisiana as the result of the discovery of gas-condensate reserves. Conservatism is the watchword as operators prepare to exploit this discovery, to avoid mistakes and pitfalls that marked previous experience.

MISSISSIPPI: Oil figures prominently among the items slated for attention in Mississippi's legislative session. Subjects include enlargement of the state Oil and Gas Board, revision of severance taxes on oil, taxation of mineral rights, and passage of a conservation act. The governor is lukewarm on the last named.

TOO HOT: There is such a thing as a race becoming too hot for the participants, as indicated in the trend in the present octane race to stress "performance" instead of octane numbers.

NIGHTMARE: Rumors of the Japanese threatening Netherland East Indies; of Soviet menacing Iran and Iraq, and of Germany moving in on Rumania disturb Allies' dream of being able to float to victory with little call on trans-Atlantic oil.

GOING DEEP: They are going far below in the search for oil in western Oklahoma in 1940, with a 10,000-ft. test started in Washita County, a Caddo wildcat already below 9,000 ft., and deep tests drilling or being started in Dewey, Garfield, Grant, and Kingfisher counties.

SOUR PREDICTION: A few years ago it was predicted that several eastern pipe-line systems would be abandoned owing to lack of business. Mounting Illinois production and 70-cent tanker rates from the Gulf to the East Coast have postponed the evil day indefinitely.

METTLE: Engineers are proving their mettle in the development of the Potash field in coastal Louisiana. The adverse conditions there encountered are being handled with a high degree of technical skill and operating technique.

OMINOUS: If Government in this nation were on a "pay as you go" basis, our tax bill would be almost a quarter larger than it is. The national income has doubled during the last 25 years, but government expenditures have increased tenfold.

OPPORTUNITY DAYS: Economists state that February presents 29 opportunity days for the industry to correct recent mistakes in its operating levels and get headed in the right direction for the rest of the year.

PROTESTS: Texas Railroad Commission plans to return to a uniform daily production this month, outside East Texas, are meeting with objections. Final decision may be left to the courts.

RUMANIA: The old game of "Button, button, who's got the button?" comes to mind in connection with the oil situation in Rumania. Wags are chanting, "Oil, oil, who gets the oil?" and the world is waiting for the answer.

ENTHUSIASTIC: Kansas operators, enthusiastic over the starting of one new pipe line and rumors of others to be laid this year, are looking for a sharp upswing in drilling in western counties as soon as the bitter weather relents a bit.

CONCENTRATION: A major company has a production of 140,000 bbl. daily in Illinois and appears headed for 200,000 bbl. during the spring. This output incidentally far exceeds its total production from many fields scattered throughout the rest of the country.

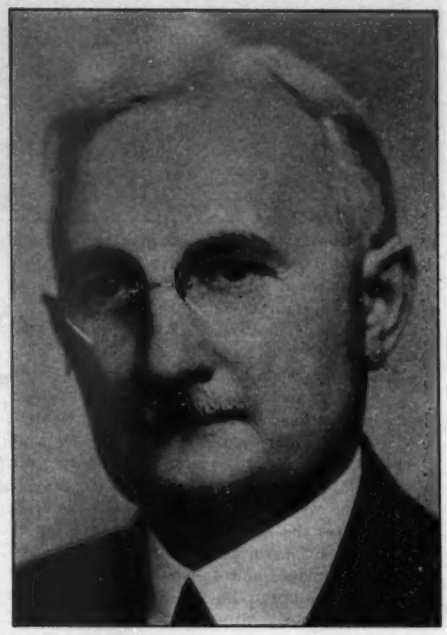
PEACETIME FORTRESS . . .

A concrete fortress (foreground) with walls 3 ft. thick and 24 ft. high surrounds the high-pressure stills recently completed by Phillips at Phillips, Tex., for the manufacture of neohexane. The stills operate under pressure of 5,000 lb. per sq. in. and carry a temperature of 950°. As an additional safety factor, the unit is operated by remote control from a control house a safe distance from the fortress. When the plant is in operation, it is never necessary for anyone to enter the concrete enclosure

The Right of Capture vs. Spacing

By DR. VICTOR H. KULP

In this article the author traces the origin, development and effects of the right of capture, its modification by spacing and other regulations, and some present-day spacing problems. The article gives a comprehensive summary of the present status of conservation and is of special value in indicating probable future trends in legislation and administration. Dr. Kulp is professor of law at the University of Oklahoma and over a period of several years has made a close study of the legal and practical phases of control in directing the oil industry's operations. This discussion was presented before the minerals section of Oklahoma Bar Association.



DR. VICTOR H. KULP

THE right of capture has proved to be basically unsound, both from the standpoint of the public and of the operator as well, for it has resulted in surface and underground waste, through failure efficiently to use the reservoir energy, thereby reducing the ultimate recovery. It has placed an undue burden upon the industry by necessitating the drilling of offset wells, unnecessarily increasing well density. This in turn has led to overproduction with its attendant evils of economic waste and instability of the industry itself.

From the very beginning of the oil industry the operators have fought off regulations, but as time went on they discovered that some of the practices indulged in became millstones, as it were, about their necks, and they asked for restrictions but jealously guarded the type and extent. In some jurisdictions they relied on gentlemen's agreements as to spacing by staying away from boundary lines a certain distance.

In 1900 the United States Supreme Court in the famous case of Ohio Oil Co. v. Indiana, 177 U. S. 190, 20 S. Ct. 576, 44, L. Ed. 729, involving a statute prohibiting surface waste of gas, suggested that the various owners of gas rights in the pool had a correlative right in the common source, but this idea was allowed to lie dormant for a quarter of a century. And when it was revived it was thought by some that the correlative right could only be enforced in connection with waste. In fact in Texas it was doubted at one time that the legislature could provide for the protection of correlative rights apart from waste, and not until 1937 did Texas pass a statute empowering the Railroad Commission to adopt rules to conserve gas so as to protect private as well as public rights. But surely it ought to be within the power of the legislature, and even without a statute within the power of the court, to enforce this correlative right. The Oklahoma Statutes of 1935 specifically mention the correlative rights. The recognition of correlative rights does not mean that each owner is to be guaranteed that oil or gas under his land is not to be drained away, but that he is to be given a fair opportunity to go after what is there and so get his fair share. This then was one of the inroads made on the right of capture.

In 1915 Oklahoma passed the first comprehensive oil and gas regulatory legislation, and through proration the right of capture was again subjected to modification, by limiting the amount to be taken out in a given time.

A third restriction upon the right of capture is gas-oil ratio legislation in which the State of California took the lead, limiting the production so that the lifting power of the gas is utilized to produce the greatest quantity of oil. But a strange thing happened in that state. After this legislation had been upheld by the courts in People v. Associated Oil Co., 212 Cal. 76, 297 P. 536 (1931), and Bandini Petroleum Co. v. Superior Court, 284 U. S. 8, 52 S. Ct. 103, 76 L. Ed. 136 (1931), the enforcement lagged on the excuse that it was impractical. However, the enforcement has again been revived for in the recent case of Ex Parte Wood, 93 P. (2d) 1058 (Sept. 12, 1939), the California Court of Appeals upheld an order of the Superior Court limiting the amount of natural gas which could be produced from the petitioner's well although it resulted in lessened production of oil with resultant damage to him.

Whipstocking Forbidden

A fourth restriction upon the right of capture is the rule of law which forbids whipstocking, or the drilling of a crooked hole so that it crosses the boundary line and produces from the adjoining land. Before instruments were perfected by which to determine not only that the hole was crooked but which could show in what direction the hole slanted, and the extent, it was contended by some that all the operator had to do was to try to drill a straight hole in good faith, and if he ended up underneath the other man's land he could produce from that well. But that theory has now been refuted in the California cases of Union Oil Co. v. Mutual Oil Co., 65 P. (2d) 896 (1937); Union Oil Co. v. Reconstruction Oil Co., 66 P. (2d) 1215 (1937); Union Oil Co. v. Mutual Oil Co., 70 P. (2d) 200 (1937); Alphonzo E. Bell Corp. v. Bell View Oil Syndicate, 76 P. (2d) 167 (1938); Pacific Western Oil Co. v. Bern Oil Co., 81 P. (2d) 207 (1938); Union Oil Co. v. Domengeaux, 86 P. (2d) 127 (1939). These cases clearly point out that crooked-hole drilling or whipstocking, innocent or intentional, gives the party whose boundary is crossed an action for the value of the oil and gas taken. If the underground trespass was in good faith, the court allows a deduction for the cost of production, but if in bad faith no deduction is allowed for expenses incurred in obtaining production.

In the fifth place the right of capture has been further restricted by spacing statutes through limiting the number of wells in a given area. This idea first gained a foothold in town-lot drilling in the well known case of Marrs v. City of Oxford, 32 F. (2d) 134, 67 A.L.R. 1336, cert. denied 280 U. S. 573, 50 Sup. Ct. 29, 74 L. Ed. 625, where the ordinance permitting only one well in a block was upheld. Since then other states, including Oklahoma, have accepted this view. See Gant v. Oklahoma City, 160 Okl. 62, 15 P. (2d) 833 (1932); Anderson-Kerr v. Van Meter, 162 Okl. 176, 19 P. (2d) 1068 (1933); Phillips Petroleum Co. v. Kite, 29 P. (2d) 942 (1934); Belvin v. Harris, 44 P. (2d) 112 (1935).

In 1919 the Texas Railroad Commission as authorized by law adopted a spacing regulation, known as Rule 37, which provided: "No well for oil or gas shall hereafter be drilled nearer than three hundred (300) feet to any other completed or drilling well on the same or adjoining tract or farm; and no well shall be drilled nearer than one hundred fifty (150) feet to any property line: Provided, that the commission, in order to prevent waste or to protect vested rights, will grant exceptions permitting the drilling within shorter distances than as above prescribed, upon application filed fully stating the facts, notice thereof having first been given to all adjacent lessees affected thereby."

This rule has been amended from time to time. For example, in 1933 as to the East Texas field, it was amended so as to make it 660 ft. from any drilling or completed well and 330 ft. from any property or division line. See Brown v. Humble Oil & Refining Co., 83 S. W. (2d) 935 (Tex. Supr. Ct. 1935). See, also, same case in 87 S. W. (2d) 1069 (1935).

The rule was tested in the case of Oxford Oil Co. v. Atlantic Oil Producing Co., 16 F. (2d) 639, affd. 22 F. (2d) 597, cert. denied 277 U. S. 585, 48 Sup. Ct. 433, 72 L. Ed. 1000 (1927), wherein the court upheld an order of the Railroad Commission permitting only four wells on a strip 3,190 ft. long and 36 ft. wide at one end, 57 ft. wide at the other end, whereas the plaintiff demanded the right to drill 52 wells on that tract. But that was just the

beginning of the troubles of the Railroad Commission with the exception feature of their spacing rule. At first it was decided that every owner of a tract no matter how much less than the drilling unit had a vested right to at least one well, in order to prevent confiscation of his rights, provided the segregation of the tract owned by the petitioner had taken place before the adoption of the rule. See Stanolind Oil & Gas Co. v. Railroad Commission of Texas, 96 S. W. (2d) 664 (T. C. A. 1936). Later this was changed to give him a vested right provided the subdivision was made before oil was discovered in that area. See Shell Petroleum Corp. vs. Railroad Commission of Texas, 116 S. W. (2d) 439 (T. C. A. 1938); Nash v. Shell Petroleum Corp., 120 S. W. (2d) 522 (T. C. A. 1938). The commission has been plagued with a great amount of litigation either by the applicant who was refused a permit for the number of wells he thought he was entitled to, or by those whose interests were adversely affected by the granting of a permit. As applied to the East Texas field the result of allowing one well no matter how small the tract was to compel the adjoining owner to ask for an exception in his favor to protect himself against excessive drainage, and so spoiling the spacing pattern, and leading to the drilling of a great many unnecessary wells. Although a 10-acre spacing unit was the rule, through the drilling of 12,000 unnecessary wells, most of them the result of exceptions there was caused an average well density of about one well to 5 acres. And it is estimated that some 8,000 more unnecessary wells in this field will be drilled and will bring the well density down to one for 4 acres. In fields discovered in Texas since the East Texas field the small tract was still permitted to have a well, but the allowable was reduced because of the smallness of the tract to obviate the necessity of making exceptions for the adjoining larger tract. However, if the allowable was cut down so that this well provided no more than the oil underlying it, the well would in many instances prove a financial loss. So the commission hit upon the plan of allotting one-half of the field allowable to well potentials and the other one-half to acreage, which still permitted the small tract to secure more oil than lying under it. As Professor Walker pointed out in his address before the mineral section of the Texas Bar Association last year: "The adoption of proper regulations controlling drilling upon these small tracts presents the basic problem upon which the success or failure of spacing regulations must ultimately depend."

Marginal Well Act

An additional difficulty has been added in Texas to their spacing problems through the Marginal Well Act (Art. 6049 b, Ver. Ann. Tex. Civ. Sts.) and the interpretation which the commission has made of it. A marginal well, according to this statute, is a pumping well capable of producing a certain amount of oil or less at various depths, and providing for a flat well allowable according to depth. This flat allowable is to be granted on the theory that if production were curtailed below this amount it would result in a loss of recoverable oil, or would cause the premature abandonment of the well. Before this statute was passed the Texas court had held that a flat well allowable was invalid because it ignored the potentials of the wells and confiscated some of the oil under wells of higher potentials. People's Petroleum Producers, Inc. v. Smith, 1 F. Supp, 361 (1932). After the statute went into effect the commission assumed that all marginal wells were entitled to the minimum allowable and any well that could do 20 bbl. a day was allowed to make it, so that the portion of the top allowable not taken by these wells was proratable among the larger wells, with the result that the highest producers were allowed only 22 bbl. a day, regardless of acreage. In a recent case the court held that such an order of the commission was invalid because the effect was substantially a flat well allowable. Rowan & Nichols Oil Co. v. Railroad Commission of Texas, 28 F. Supp. 131 (D. C. W. D. Texas June 12, 1939), where the court in condemning this method of proration said:

"It is sufficient to say that it takes no account of the difference in the wells, of the richness of the sand, of the location upon the structure, of the porosity or permeability of the sand, of the estimated oil reserves, or of the acreage upon which the respective wells are situated. The worst property is raised to the level of the best and the best is lowered to the level of the worst."

But this is not the end of the commission's troubles. There are two interesting and important cases now pending in Texas that reemphasize the conflict between the right of capture and spacing in conjunction with proration. One of them is Fischer v. Railroad Commission of Texas, in which the plaintiff as owner of several wells on 1-acre tracts, and claiming potential of 20,000 bbl. per day, is attacking an order of the commission which limits his production to 20 bbl. a day for 20 days a month, while wells on adjoining tracts with a density of one well to 5 acres and a potential of 10,000 bbl. per day are allowed 40 bbl. for the corresponding period. His theory is that the owner of wells in the best part of the field is entitled to capture not only the amount of oil under his tract but to take also that which gravitates to it. He maintains that it has always been the law of the state that the owner of a tract of land, however small, is entitled to drill at least one well thereon and take all the oil under his tract and all that flows to it; that by virtue of the decisions of the Supreme Court this has become a vested property right and cannot be destroyed by orders of the commission; that the power of the commission is to prevent production that will cause waste, but not to cut down production on small tracts to make operation unprofitable.

Theory of Humble Case

The other case is Humble Oil & Refining Co. v. Railroad Commission of Texas and is also an attack upon an order, which the plaintiff claims does not give it a fair share of the production. But the theory of this case is very different from the Fischer case, for the Humble Oil & Refining Co. bases its case on an allegation that since it owns in the East Texas field 14.3 per cent of the field's reserves, but under the order is allowed to produce only 11.15 per cent, it is thereby deprived of 3.15 per cent or 21,750 bbl. daily. It contends that to require the drilling of more and unnecessary wells in order to gain more production would be to subject it to the loss of the cost of these additional wells. The plaintiff further alleges that the allowing of 20 bbl. to each marginal well takes up all of the top allowable of 690,000 bbl. per day except 176,522 bbl., which, when allocated between the other wells, beginning with a minimum of 20 bbl. for each nonmarginal well in the field and going as high as 50 bbl., does not give proper consideration to the differences between the poorer properties and the better. Lastly, the top allowable of 690,000 is too high for the field and will result in physical waste, lowering the ultimate recovery and so confiscating some of plaintiff's property. The theory of this case is that every lease owner is entitled to take that which is in place under his lease and no more, and that the allowable should be fixed among the wells in the pool so that each owner would be permitted to produce proportionately as his oil in place bears to all the oil in place in the pool. If this contention prevails, it is argued it will seriously affect the small tracts by cutting down their allowable to a point where it will become necessary to abandon many wells. The Supreme Court of Texas has not definitely committed itself.

In Brown v. Humble Oil & Refining Co., 83 S. W. (2d) 935 (1935) the Supreme Court of Texas said: "but in all such instances (i.e., where exceptions are granted) it is the duty of the commission to adjust the allowable, based upon the potential production, so as to give to the owner of such smaller tract only his just proportion of the oil and gas. By this method each person will be entitled to recover a quantity of oil and gas substantially equivalent in amount to the recoverable oil and gas under his land."

Possible Misconstruction

However, when the Texas Supreme Court's attention was called to the fact that this might be construed to mean that the tract will be permitted to produce only a quantity of oil measured by the proportion which its acreage bears to the acreage of tracts developed under the general provisions of the rule, the court in supplementing the original opinion left the matter open by attempting to explain away the language used. See the same case in 87 S. W. (2d) 1069 (1935), where the court said:

"The language quoted was used, not for the purpose of prescribing rules or standards, but merely in a discussion of the validity and purpose of the rule and its exception, as showing that the rule and the exceptions with respect to vested rights are reasonable; and that, while it is 'impossible to measure the quantity of oil and gas beneath each tract of land,' or to 'give exact justice to all land owners,' the rule and the exception can be so administered as to prevent the invasion of property rights by fairly and reasonably, but of course not exactly, protecting each owner in the ownership of, and in the opportunity to save and produce, the oil and gas which according to the decisions in this state he has a right to take."

Fortunately Oklahoma has adopted a better spacing plan. In the Act of 1935 it is provided that the Corporation Commission "shall have the power to establish well-spacing and drilling units of uniform and specified size and shape for any common source of supply discovered in this state after this act shall become effective, or for any common source of supply producing in said state when this act shall become effective where the well-spacing and drilling unit established for said producing common source of supply shall not unreasonably prejudice, affect, or impair the correlative rights and obligations of the producers of oil and royalty owners interested in the said common source of supply."

After a spacing unit has been determined for a given area, the act further provides:

"If two or more separately owned tracts are embraced within an established spacing or drilling unit, any oil lessee or other person having the right to drill one of said separately owned tracts may do so; Provided, the allowable production from said separately owned tract shall be such proportion of its daily capacity as herein determined as the acreage of said separately owned tract bears to the entire acreage of the spacing or drilling unit upon which it is drilled."

If the owner or lessee of the majority acreage in a unit wants to drill on his part, the statute requires him to give notice to the owner or if leased to the lessee of the minority acreage, of the reasonable cost of drilling, equipping and completing a well, so that the minority owner or lessee has an opportunity to come in and share the expense and the production. If the minority owner, or if leased, his lessee fails to avail himself of this opportunity, the owner or, if leased, the royalty owner shares in the one-eighth of the production on the majority

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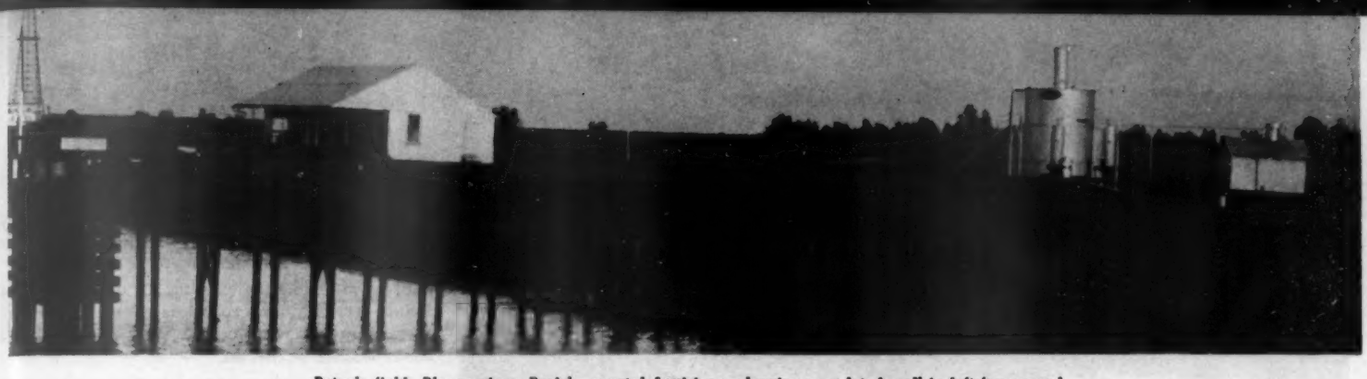


Potash field, Plaquemines Parish, coastal Louisiana, showing completed well in left foreground

Unusual Operating Conditions in Louisiana's Potash Field

By NEIL WILLIAMS

DEVELOPMENT of the Potash field, Plaquemines Parish, coastal Louisiana, about 60 miles down the Mississippi River from New Orleans, has presented some unusual operating conditions. Located in a flood-diversion spillway of the river, the field is subject to inundation during periods of high water. The fact that it is on the river bank, where the overflow would empty into the spillway, exposes the field to the full sweep and force of the swift flood currents. These conditions necessitate special precautions to safeguard wells and other field properties and insure uninterrupted operations.

The spillway extends from the river eastward to Breton Sound, which at that place is only a few miles distant. Within the spillway the country consists of uninhabited, low-lying, waste marsh land, into which there is no access except by waterways. This has occasioned adoption of maritime practices in development of the field. Because of the use of that stretch of waste land as a spillway, there is no levee along the east bank of the river at that point. Levees along the north side divert and confine flood waters to the spillway.

Humble Oil & Refining Co., with Gulf Refining Co. as joint owner, is the sole operator in the field. This company has undertaken a systematic, consistent development program. It now is engaged in providing a large, modern camp, including a field office and warehouse from which to direct its operations. The project also calls for building an oil-loading dock on the river to facilitate movement of the field's production by barge or tanker.

Location of the camp site is about 3 miles north of the field. It also is within the spillway, being just inside the north levee, where it is accessible to the highway that follows the east side of the river down from New Orleans, and which ends at the levee. A site of 12 acres overlooking the Mississippi River has been set aside for the camp. It consists of reclaimed land which is being filled in to build it above the high-water level. Drag lines and dredges are being used in this work, the soil being obtained by excavating and dredging of canals around the site.

A canal has been dredged from the camp site to the field to permit movement of equipment and materials by barge and boat. This will be the only access to the operations. Wharves and landings will be built at the camp site for docking and loading of boats.

So far, operations have been carried on from the west side of the river. Port Sulphur is located on that side, just across the river from the field, and from there, where a private landing and wharf was provided, it has been possible to transport supplies to the field, and there, also, crews have made their headquarters. Entrance to the field has been gained through a canal which was cut through the east bank of the river. From Port Sulphur there is a good highway, and also a railroad line, to New Orleans, following the west bank of the river.

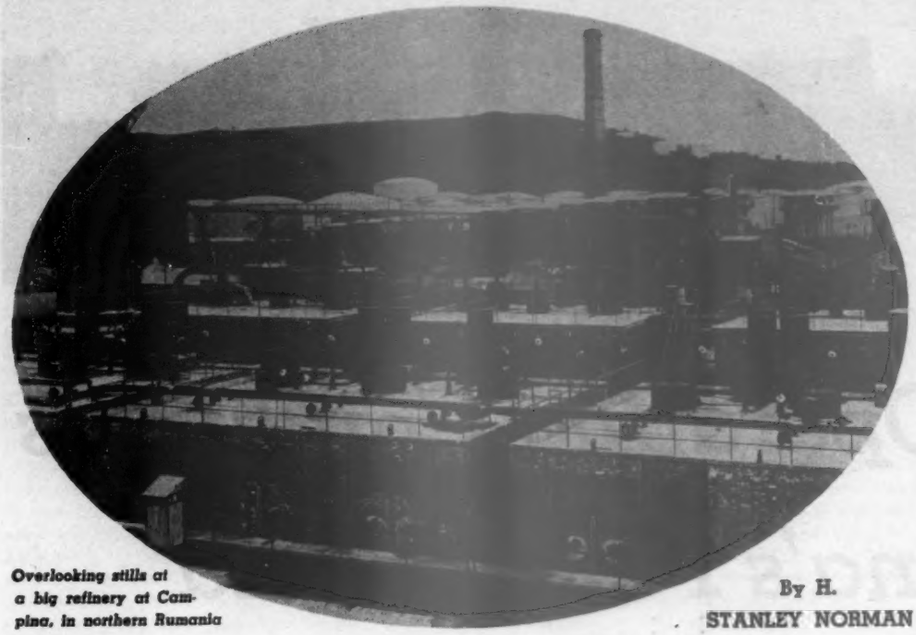
However, due to the fact that the company has been required to close the gap that had been cut through the east bank of the river for the canal and entrance to the field, it has been necessary to arrange for carrying on operations from the east, or field side of the river. The U. S. War Department, which has jurisdiction over control of the river, ruled that the gap might cause the river during a flood period to wash out the bank at that point and cut a new channel to sea.

Without the gap and the canal opening into the river it would be impossible for the company to operate the field by way of the river. Building of landings and wharves would be required, which at that place, although the field is directly on the river bank, would not be feasible, considering the conditions and type of development in the field. By establishing a camp and operating base on the east side of the river, the company gets away from the hazards of crossing the river. There the river is wide and has strong currents; dense fogs are frequent, and large ships ply constantly to and from the various terminals and docks up the river, all of which create dangers.

Potash is a shallow, piercement-type salt dome. Although exploration and development so far have been confined to the bank of the river, the dome extends out under the river, so that, with extension of sands and production around the

(Continued on Page 87)

The picture at the bottom shows diesel-electric drilling rig in operation in the Potash field. Inset shows C. C. Clifton, district superintendent, southeastern Louisiana, Humble Oil & Refining Co.; Henry Champagne, contractor, and Jack Greene, field superintendent, Potash; C. T. Miers, assistant district superintendent, and Fred Mills, chief clerk, production department, southeastern Louisiana district, Humble Oil & Refining Co. Sitting in front is one of the boatmen at Potash



Overlooking stills at a big refinery at Campina, in northern Rumania

By H. STANLEY NORMAN

Rumania Oil-Control Showdown Nears

RECENT events in eastern Europe have caused concern over what is to become of the 7,000,000 metric tons of oil (47,000,000 bbl.) produced annually by Rumanian wells.

It is not that the present volume of oil shipments from Rumania to Germany is bothering anyone, for, with the Danube frozen solid, it is regarded as doubtful that more than a few thousand tons of petroleum find their way into Germany by rail each month. However, the Allies want to be sure that King Carol's decree of January 17, establishing state control over Rumanian production and exports of oil, will not prevent them from using their superior credit facilities to buy up the lion's share of exports, thus keeping it from Germany when conditions of transport improve.

Under the terms of his decree King Carol has created a special petroleum commission under the Ministry of National Economy to supervise and control all foreign oil companies operating in Rumania. The recent German-Rumanian trade treaty called for shipment of 130,000 tons, roughly 1,000,000 bbl. per month, to the Reich. Deliveries have fallen considerably below the projected mark, partly because of the frozen condition of the Danube tying up scores of tankers. There has also been difficulty in working out an arrangement between Germany and Soviet Russia whereby shipments of oil over land would pass through former Polish territory.

The new Rumanian Government Mission which will function for 2 years will take control of production, refining, distribution, retailing, and storage of petroleum, according to reports from Bucarest. Rumanian officials said the move was merely another war measure taken in the interest of the country's security and that an army general probably will be placed at the head of the commission.

There were reports that a compromise might be reached whereby the Rumanian Government would buy oil from the British and French companies, in turn selling it to Germany to enable fulfillment of the treaty quota. Otherwise, it was said, that Germany might bring pressure either directly or through some neighboring state.

It was not made exactly clear whether the new government regulation completely nationalizes the petroleum industry. It was indicated, however, that the individual companies would continue to operate their properties, probably with the government exercising an increasing supervisory position.

Foreign Interests in Fields

While Rumanian law requires the equal participation of domestic capital with foreign companies doing business there, it is estimated that about 80 per cent of the best oil fields are being worked by companies with substantial amounts of British, French, Belgian, Netherland, and American capital. It was the fear that the British and French companies might be forced by decree into the anomalous position of being compelled to trade extensively with the enemy that led to representations last week by Great Britain and France that any such possibility would have a seriously adverse effect upon the Anglo-Franco-Rumanian trade treaty now pending to offset the Reich saber-rattling.

About 4,500,000 tons of Rumania's total oil output is exported annually. Germany's present quota is 1,000,000 tons. Italy takes 650,000 tons, Britain another 500,000, and France 250,000.

Recently Germany has been exerting pressure to increase her oil imports from Rumania, hinting that if she did not have her way she would be forced to conclude that Rumania was not really neutral, but had been seduced by British gold. In short, it was impressed upon Rumania that Britain and France might be richer but that Germany was her close friend and that Russia was much closer.

The importance of oil in European warfare was accented by a number of developments. Reports were published that Germany and Soviet Russia have revised their understanding in Poland and that the Reich is occupying the territory in which is located the Drohobycz oil fields. This report was denied by Germany.

Plans to double the existing 500 oil wells in the Polish territory now consolidated with Germany have been reported by the United States trade commissioner in Berlin.

Despite the damage caused by the campaign in Poland, production from that part accruing to Germany had risen to within approximately 10 per cent of its peacetime average. Before the war, the German part of Poland produced approximately 1,125,000 bbl. of oil annually.

Although in the partition of Poland the most important petroleum-producing regions were occupied by Soviet Russia, German activity in the secondary region lying between New Sandoz and the San River may help in a small way toward meeting the acute petroleum needs of the Reich. The interest taken by German authorities in the Polish oil fields is manifested by a recent inspection trip through the fields and refineries by Reich Minister Dr. Frank.

As one step in attempting to increase production from its Polish territory German technicians will replace much of the obsolete field equipment with modern machinery from German steel mills.

Of vital importance to the German importation of Rumanian oil is the attitude taken by the newly established Russian authority toward commerce on the railway line connecting Rumania with Germany by way of Lemberg. For a time the very existence of this old trade route as a practical railway unit was brought into question, while negotiations were in progress touching upon proposed changes in the gage of all Polish railway lines now held by the Soviet troops. It was originally proposed to transform all tracks into the wide Russian gage which differs from the Central European and Rumanian, and which would have made it impossible for through traffic to move from Rumania to Cracow. A compromise has now been reached whereby the other lines in Polish territory occupied by Soviet troops will be altered to the wide Russian gage, while the Rumanian-Polish-German railway line will remain in the Central European gage as at present. This at least permits the passage of trains when the authorities agree to let trade resume.

Observers estimate that possibly a third of the freight cars which the Soviet authorities will admit daily via Lemberg may be expected to carry petroleum. This means about 200 tank cars daily, every one of which carries approximately 120 bbl. of oil. The daily average of 24,000 bbl. of petroleum must total, if steadily maintained, about 8,000,000 bbl. of oil annually.

Germany imported during peacetime about 35,000,000 to 40,000,000 bbl. of oil every year. Its present importations are far below the peacetime total, yet it is of importance to note that supplies from Rumania may now be expected to meet about half of the Reich's peacetime needs. Along the Danube waterway it is calculated that Germany may receive about 8,000,000 bbl. of oil a year in barges. The Danube rail route, for which Germany is supplying the tank cars, may be expected to carry between 4,000,000 and 4,800,000 bbl. of additional oil. To these supplies by way of the Danube road and water route may now be added supplies of oil shipped over the Carpathians by the formerly Polish railway through Lemberg. Due to the Soviet concessions in Poland, Germany may be expected to receive from the Rumanian oil fields by all available routes, so long as they remain open and the supply is not stopped at the source, approximately half its peacetime needs in foreign petroleum importations.

Madison Appeal to Be Test Case on Antitrust Prosecution

By HENRY D. RALPH

WASHINGTON, D. C., Jan. 29.—The forthcoming decision of the Supreme Court in the appeal of the Madison case will be awaited with great interest, not only by the defendants and the oil industry, but by business men, trade association executives, and lawyers interested in the extent to which competitors may agree upon a program to stabilize industry and correct competitive abuses without running afoul of the Antitrust Act.

The appeal has been set for argument for the week of February 5, and a decision can be expected within a month or 6 weeks. It will be the first important antitrust case to be decided by the Supreme Court as reconstituted during the past couple of years through the appointment by President Roosevelt of five of the nine judges.

In this case the federal District Court at Madison, Wis., convicted a group of major oil companies and individuals on charges of conspiring to raise gasoline prices in the midwestern marketing area through operation of a buying pool to absorb surplus gasoline of independent refiners. On appeal, the Circuit Court of Appeals for the seventh circuit set aside the conviction, one of the important grounds being that the buying pool was not an unreasonable restraint of competition.

The appeal to the Supreme Court involves a number of rather technical matters bearing upon the conduct of the trial and the judge's charge to the jury, but probably the major point, and certainly the point of greatest interest to business generally, is the contention of the Circuit Court that the buying pool was not an unreasonable restraint of trade but was a plan to stabilize competition of the type approved by the Supreme Court in the Appalachian Coals decision. The Department of Justice, in the brief filed with the Supreme Court, contends the cases are not parallel and that the Supreme Court should find that a combination with power to control the market and fix prices is a violation of the act as interpreted by the famous Trenton Potteries decision.

Conflicting Court Decisions

Ever since the Supreme Court read the "rule of reason" into the Sherman Act in its decision on dissolution of the old Standard Oil Co. in 1911, there has been uncertainty as to what sort of restraint of trade is permitted by the antitrust laws. There have been a great many decisions of the Supreme Court on this subject, and many of them are somewhat conflicting. In general, they fall into two classes, one following the line of the Trenton Potteries case and tending to hold almost any concerted action among competitors to be illegal, while the other line of decisions leads up to the Appalachian Coals case and holds there are many sorts of concerted agreements among competitors which do not violate the Sherman Act because they stabilize the industry and eliminate certain competitive evils without injuring consumers or imposing an unreasonable restraint on trade.

The conflict between these two lines of decisions is brought to a head in the Madison case, and unless the Supreme Court bases its decision on some of the more technical issues and avoids discussion of this point, it is expected that the court's opinion will go far in giving a better understanding of the Sherman Act. In fact, if the court faces this issue squarely and gives an understandable opinion as to what sort of agreement among competitors is reasonable and therefore not in violation of the law, the decision may have a profound effect upon recommendations of the Temporary National Economic Committee and future legislation by Congress.

The principal defense of the companies and individuals convicted at Madison was that the buying pool is reasonable and this is based upon the contention that the gasoline which they combined to purchase was surplus or distress gasoline, that this gasoline constitutes a competitive evil or trade abuse, that the primary purpose of their combination was to correct or eliminate this industrial evil, and that any purpose to raise or maintain prices and any increase or maintenance of price actually resulting were merely incidental to this primary objective. The legal proposition of the defense, based on these factual premises, is that combination or concerted effort, even by a preponderant group in an industry, to remedy an industrial evil, when those combining have neither the power nor the purpose to produce any effect upon market price other than that resulting from correction of this evil, does not unreasonably restrain trade. They base this argument on the Appalachian Coals case.

The Government's brief challenges both this legal argument and the facts upon whch it is premised. As to the facts, it contends that the presence of surplus gasoline is not a competitive evil since it is not a permanent condition of oversupply and the gasoline is not a byproduct of some other operation the production of which is beyond the refiners' control. The brief points out that the amounts to be purchased by the majors were determined by the independent refiners themselves, were usually determined in advance of production, and constituted from one-third to one-half of the normal spot-market sales of the Mid-Continent independent refiners.

Department's Comment on Law

As to the law, the department's brief says:

"The most important issue in this case is whether the District Court was correct in charging the jury that, if the defendants combined together for the purpose of raising and fixing gasoline prices in the manner charged in the indictment, and if they had the power to raise these prices, their restraint was unlawful and unreasonable. Determination of this issue turns upon whether the case at bar is within the authority of United States v. Trenton Potteries Co., 273 U. S. 392, where it was held that a price-fixing combination which vests in the parties thereto the power to control the market and to fix arbitrary and unreasonable prices constitutes an unreasonable restraint within the direct prohibitions of the Sherman Act, and that, therefore, if the jury finds that a combination having such power and purpose has been formed, no question as to the reasonableness of the restraint is open, by way of defense, for jury consideration."

The Government's brief devotes much more space to elaborating this contention than to any of the more technical grounds upon which the Circuit Court reversed the Madison court, but its chief arguments are: that the Supreme Court has uniformly held that a combination having both the purpose and the power to control the market price of a commodity imposes an unreasonable and unlawful restraint directly prohibited by the Sherman Act; that the affirmation of this rule in the Trenton Potteries decision is a sound and correct application of the prohibitions of the act; and that the holding in the Trenton Potteries case and other like cases was correctly applied by the trial court in its instructions to the jury in this case and was incorrectly applied by the Circuit Court in setting aside the decision.

GOVERNMENT WITHDRAWS APPEAL ON JUDGE STONE'S RULING

WASHINGTON, D. C., Jan. 29.—The Government abandoned today its effort to have the Supreme Court nullify the action of federal District Judge Patrick T. Stone in dismissing indictments against 11 defendants in the Madison, Wis., oil case.

The Supreme Court, after the death of Justice Butler, by a 4-to-4 vote, sustained Judge Stone. The Department of Justice then asked for a reconsideration by a nine-man court. Subsequently, Atty. Gen. Frank Murphy was appointed to the court, and since he had participated in antitrust activity as attorney general, it was assumed he had decided to disqualify himself from participating in the Madison case. If he did not take part, the 4-to-4 decision probably would stand. This, it was believed, was the reason Solicitor General Francis Biddle asked—and received—today permission to withdraw the petition for reconsideration.

This action, however, does not affect the other appeal in the main Madison case to be argued next week, which is discussed in the accompanying article from Washington.

Elk Hills Appeal Refused

STANDARD OIL CO. of California failed to obtain a Supreme Court review of a decision awarding to the federal Government lands in the Elk Hills field. The company appealed from the ninth federal Circuit Court, which awarded a $6,214,102 judgment for the Government.

The land became the property of California in 1903 before oil was discovered there. In 1909 and 1910 the Standard acquired title. In 1924 Congress authorized the secretary of the interior to sue for title. Secretary Ickes in 1935 ruled that the property was known mineral land in 1903 and that therefore title could not legally have gone to California.

STATE CAPITALS

ARKANSAS

ALLOWABLE PRODUCTION FOR THE MONTH of February was set at a total of 70,000 bbl. daily by the Arkansas Oil and Gas Commission last week. Of that total, 42,980 bbl. daily represents controlled production from flush fields, an increase of 1,178 bbl. over the January total.

Concurrent with the schedule announced of the coming month's production, came two attacks on the commission by the Lion Oil Refining Co., of El Dorado. On January 25, the company filed a suit in the First Division of the Union Chancery Court, naming as defendants, members of the commission, the state attorney general, and the district prosecuting attorney. It is charged that the company, which owns production in the thick section of the Jones sand at Schuler, is being deprived of its property without due process of law. A formula, based on acreage, pressure, and sand thickness, which would allow greater production from the greater sand sections of the Jones reservoir, has been proposed at previous hearings by Lion and the Phillips Petroleum Co. The commission has continued its allocation methods, however, based on an acreage-times-pressure basis, which it considers equitable and more workable than the proposed acre-foot-pound basis. No date has yet been set for a hearing on the suit by the Chancery Court.

Closely following the filing of the complaint, the Lion Oil Refining Co. filed an application with the Oil and Gas Commission for dissolution of the order scheduling February's production allowable. The company charges that the order was issued without a notice or hearing, and was not adopted by members of the commission. It has been customary in the past several months to hold a regular hearing bimonthly, and to issue production schedules at the intervening monthly periods which merely correct per-well allowables to conform with new completions during the previous month.

TEXAS

SEVEN-DAY PRODUCTION IN TEXAS FIELDS, except East Texas, was restored in the February proration order issued by the Railroad Commission last week. The order lifted shutdowns in all fields, except in East Texas where there are to be 12, and set the total daily allowable at 1,390,151 bbl. during the month. This figure exceeds the Bureau of Mines estimated market-demand figure by 18,751 bbl., but the commission estimates underproduction of allowables by wells not capable of making the figure set on the schedule will reduce daily average production for the month below the bureau's figure. Normal underproduction in past months has approximated 34,000 bbl., so that the average daily production is expected to be 15,000 bbl. below the quota. A comparison of the estimated net daily production on January 20 and the allowable for February 1, by districts, is as follows:

	Jan. 20 est. prod.	Feb. 1 allowable
Southwest Texas	231,311	223,400
Gulf Coast, Texas	235,995	225,372
East Central Texas	86,360	80,015
*East Texas	400,643	*404,480
West Central Texas	46,572	56,161
West Texas	219,060	196,656
North Texas	98,521	124,036
Panhandle Texas	77,676	80,031
Total	1,397,138	1,390,151

*Estimated daily average allowable from basic of 690,000 bbl. and exclusive of about 2,000 bbl. daily increase resulting from exemption of marginal and submarginal wells from the 12 days of shutdowns.

At the same time the commission issued a revision of the marginal-well law, in which the definition of a marginal well is revised to coincide with the construction of the statute as outlined in an opinion recently issued by Atty. Gen. Gerald Mann. In this order marginal wells, according to their classification by depth, are specifically exempted from proration and are defined as pumping wells incapable of producing more than the statutory amount on the average over a period of 30 days. Thus the approximately 500 marginal wells in the East Texas field are exempted from the shutdown order, which is expected to result in an increase in daily production of about 2,000 bbl.

A NEW FEDERAL COURT SUIT directly attacking the current East Texas order and the validity of the marginal-well law was filed here last week by Rowan & Nichols Oil Co. of Fort Worth. The company, whose lawsuit last year led to changes in the East Texas method of proration, stated in its petition that a minimum of 20 bbl. has been set for East Texas wells under a "misinterpretation" of the marginal-well law. It further stated in its petition that "if the marginal-well law does require the commission to give any pumping wells an allowable of 20 bbl., the same is void because it bears no relation to physical waste."

The petition also sets out that the company's Todd-A lease has on it seven wells, sufficient to drain the tract. But the commission in prorating East Texas "arbitrarily gives each well a minimum of 20 bbl. without regard for the ability of the well to produce." This basic allowable operates to "deprive complainant of his property" without due process. The lease should be given an increase of at least 60 per cent over current schedules, it states. No date has as yet been set by the court for the hearing.

TO CURTAIL TEXAS DRILLING OPERATIONS the Railroad Commission on Saturday, January 27, issued an order revising the statewide spacing rules so that effective February 1, well spacing must be 467 ft. from boundary lines and 933 ft. between wells, unless an exception is granted by the commission. The revised rule provides 20-acre well spacing, whereas the former allowed one well to about 2½ acres in which the well was placed a minimum of 150 ft. from lease lines and 300 ft. from another well. The order will affect only future drilling and will not alter special spacing prescribed in field rules. In fields where rules have not been adopted, however, the order will be effective and will result in requests from operators in many fields for the commission to hold hearings so that field rules may be promulgated. Most notable example is the Panhandle where operators, by agreement among themselves, have developed their leases on 10-acre pattern.

The order provides, as in the past, that the commission may grant exception to the rule if closer spacing is proved necessary to prevent waste and/or confiscation of property. Any well drilled closer than the distances set forth in the order, for which the commission has not granted a special permit, will not be allowed to produce any oil or gas and by the commission's own order shall be plugged, the order states.

MISSISSIPPI

THE MISSISSIPPI LEGISLATURE, in session in Jackson, will soon give attention to a conservation bill to be presented in the house. Appointed to the conservation committee last week were: Representatives Allen Thompson, of Hinds County, chairman; Edgar Misterfeldt, of Rankin County, vice chairman; John E. Aldridge; Grafton E. Allred; J. R. Black; Hubert B. Boykin; Jesse M. Byrd; John S. Clark; Howard Dyer; Russell L. Fox; W. D. Gary; W. S. Graves; Milton H. Grisham; Harry A. Jacobson; W. H. Jumper; Burton R. McMillan; Mrs. Charles Mansell; Tom Minniece; Dr. S. E. Osborne; Robert N. Reed; Otho Rester; Ted Russell; J. M. Talbot; E. F. Thigpen; and Oscar Wolfe. Of this important 25-man committee, a subcommittee, probably headed by Vice Chairman Misterfeldt, will study the proposed oil and gas conservation bill.

ILLINOIS

FACED WITH A SERIES of complex political problems and a growing conviction on the part of Illinois administration leaders that official opinion is against immediate consideration of conservation or proration legislation, Gov. Henry Horner is not expected to call a special session of the General Assembly until after the April 9 primary election.

The administration, according to close observers, is pursuing a policy of "stalling" on the oil issue. A control measure reportedly drafted under the direction of Prof. Neil Jacoby, of Chicago, professor of economics at Northwestern University and member of the Illinois Emergency Relief Commission, was sent to Atty. Gen. John E. Cassidy on January 6. Since that time the attorney general has revealed that certain features of the proposed bill have been noted as "suggested" changes. At the present time, however, the bill apparently is still in the latter's office.

This procedure in itself was a distinct departure from usual custom. Heretofore, the governor has sent bills to the attorney general only after they had been passed by the legislature in order to secure an advance ruling on their legality and technical worth.

Although Governor Horner has never issued a formal statement, competent observers base their judgment on two facts: First, an announcement in his most recent press conference that "there is really no relation between the primary election and a special session"; and, second, continued postponement of the plan was begun more than 6 months ago. Both facts point to certain postponement of the call until after the election contest.

An important feature of the current discussion on the subject of petroleum has come to light in the last 2 weeks: "Level headed" members of both political parties are not opposing such legislation, and the majority in reality are predicting inevitable passage of a "fair" measure in the next regular session in 1941.

Such noteworthy expressions are now coming from legislators who have guardedly expressed themselves on the subject thus far and who are quietly making a serious study of the industry.

CALIFORNIA

ALLOWABLE DAILY PRODUCTION of California in February has been set at not to exceed 594,000 bbl. daily by the Central Committee of California Oil Producers. This represents a reduction of 5,000 bbl. per day from the allowable that prevailed during January.

OKLAHOMA

OKLAHOMA ALLOWABLE PRODUCTION in February was placed at 429,000 bbl. per day by the Corporation Commission at its meeting Tuesday morning. This is the same as the Bureau of Mines estimate of demand.

LOUISIANA

THE LOUISIANA Department of Conservation set 273,253 bbl. as the state's daily allowable production in February. South Louisiana production is fixed at 211,908 bbl., an increase of 5,482 bbl. over January, and North Louisiana's quota is 61,444 bbl., a decrease of 781 bbl. Cotton Valley production in North Louisiana will undergo changes in February. From a flat daily allowable of 275 bbl., oil wells in the Bodcaw and D sands of the lower Marine will be prorated on a gas-oil ratio basis of 4,000 to 1, with top allowable fixed at 300 bbl. In the gas-condensate reservoir of the Bodcaw sand, the allowable will nearly double, due to increased outlet for the gas. Based on marketable gas from the pool, distillate wells will increase production due to the added outlet of the United Gas Pipe Line Co. in its new Monroe-Jackson gas line, serving states to the east. This increases the field's gas production from 44 to 80 million cubic feet daily, representing an average increase from 614,000 to 1,116,000 cu. ft. daily for 80-acre wells in the field.

The OIL AND GAS JOURNAL

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Will It Pay?

Most industries, from time to time, are confronted with the fact that there are two kinds of demand—profitable and unprofitable. That is the situation which faces refiners and marketers during this period of expanding markets, new refining processes, octane races, mounting gasoline stocks and low prices for some products.

There is danger that in the resulting confusion 1940 will not bring the profits hoped for.

In the past half year there have been exceptionally large gains in demand for all products classified as heating oils. Part of this increase is due to the continuance of a trend under way for several years, and part to the temporary increase in demands of certain customers. The war has also been a factor.

Many refiners have been faced with a situation in which the demand of their customers for these fuel oils has greatly exceeded what they anticipated.

A typical case is that of a Mid-Continent refiner who found in December that the January demand for residual oil, gas oil and distillate would be 20,000 bbl. greater than he had expected. To take care of that demand he ran 50,000 bbl. more crude through his stills. He obtained the 20,000 bbl. of heavy oils but at the same time he produced 20,000 bbl. of gasoline for which he did not have any current demand. He got rid of part of it by cutting prices but most of the extra output was added to an already excessive storage.

This is not an isolated example but is representative of refinery operations in a large section of the country in recent months.

Profit-wise, the expansion in operations was unwise for two reasons. In the first place the average price received for the products sold as fuel was not equal to the cost of the crude oil at the refinery. Second, the production of unneeded gasoline was a factor in the recent widespread price decline in this product and the addition of stocks in excess of seasonal requirements means that much more gasoline must be liquidated next summer, possibly at unsatisfactory prices.

Here is another case in which the tail has been permitted to wag the dog—a situation in which the manufacture of byproducts has dominated an entire operation to the detriment of those products on which profits depend.

In addition to competition which affects prices directly we also have competition in quality, often equally important.

Recently we have had the spectacle of sales departments being upset over the fact that competitors increased the octane rating two or three points because of new processes being placed in operation.

Refinery programs were completely revamped so that the companies could meet this competition. This disturbed other companies which revised their plant operations, not only to meet the competition, but going one step farther and raising the octane rating another point or two.

Improvement in quality, where needed to better serve the consumer, is desirable and such competition must, of course, be met. The main point here, however, is that these improvements are developed gradually and cars overnight do not suddenly require a substantial improvement in antiknock properties of their fuel.

Certainly, there is no justification for companies so revising their plans that their entire refining and marketing operations represent a loss instead of a profit.

The remedy rests in the hands of refiners and marketers. The panacea for these unbalanced plant operations and ruinous station competition is for every operator before disrupting existing schedules to be able to answer affirmatively: Will it pay?

Acute Fuel-Oil Supply Situation in New York

NEW YORK, Jan. 29.—The acute fuel-oil supply situation was spotlighted last week in New York when Mayor La Guardia addressed telegrams to the heads of seven integrated companies asking for assurance that fuel-oil demand would be met.

Socony-Vacuum Oil Co., Inc., and Standard Oil Co. of New Jersey replied that demand of contract customers had been met in all instances despite an increase of about 25 per cent in New York consumption within their scope of activity.

Independent distributors are finding it difficult to fill orders against contracts written last summer when a top tank-wagon price of 6¾ cents per gallon was included for over the winter requirements. But owners are asking upwards of 70 cents per barrel for moving light fuel-oil cargoes from Gulf ports to New York and spot prices at Texas and Louisiana refineries are strong at seasonal highs.

Distributors committed to consumer contracts without compensating supply agreements are practically unable to locate material. Supplies available to this class of distributor are held at the source at prices incompatable with last summer's contract committments.

Messages went from the mayor's office to: Consolidated Oil Corp., Shell Oil Co., Inc., Tide Water Associated Oil Co., Gulf Oil Corp., Mexican Petroleum Corp., Socony-Vacuum, and Standard of New Jersey.

In replying to Mr. La Guardia's message Standard of New Jersey said its marketing affiliates in this section had delivered 50 per cent more fuel oil so far this winter than last.

Socony-Vacuum's statement issued over the signature of J. A. Brown, president, said it had supplied New York City with 30 per cent more fuel oils in September, 29 per cent more in October, 42 per cent more in November, 10 per cent more in December, and 14 per cent more the first half of January than during the same periods in the preceding year. Mr. Brown called attention to the fact that continuous cold weather has existed without a break for more than 45 days and to the rise of 40 per cent in industrial activity from September 1, 1939, to January 1, 1940.

Still another factor in the impediment of fuel-oil deliveries is the frozen condition of bays around Long Island and the river routes over which deliveries are normally made by barges and small tankers.

Bell Interests Enter Illinois With New Corporation

A new firm, Bell General Oil Corp., organized by Bell Oil & Gas Co., of Tulsa, and General American Oil Co., of Dallas, Tex., has purchased the producing properties of Illinois General Oil Co. in the Mill Shoals area, White County, Illinois, including four wells, two producing in the Aux Vases sand, one in the Rosiclare lime, and the other in the Rosiclare and Aux Vases formations.

The company will open offices at Fairfield, Ill., under the direction of Louis Mack, chief engineer of Bell. It will lay a pipe line connecting its properties as well as other properties, to a loading-rack site south of Mill Shoals. Part of the program will be to contemplate laying a main pipe line to tie in with certain major lines in the vicinity, and to conduct a pipe line, as well as a producing business, not only in the Mill Shoals area but in other areas such as the Barnhill pool and new Storm pool.

The new company will be headed by M. Lloyd Freese, vice president of Bell, and president of Bell General Transit Corp. The company at this time does not state whether it contemplates building a refinery either on the Ohio River or in the interior, although the matter, it is said, has been under discussion.

Witnesses Scheduled Before Cole Subcommittee

WASHINGTON, D. C., Jan. 29.—The Cole subcommittee on petroleum legislation will resume hearings on the federal oil-control bill in Washington February 5. First witnesses to be heard will be officials of oil-producing states, and probably the week of February 19 the committee will begin to hear representatives of the industry.

State officials so far scheduled are: O. C. Bailey, chairman of the Arkansas Oil and Gas Commission; F. J. Hoffmaster, director of conservation for Michigan; Payne Ratner, governor of Kansas; Hiram Dow, representative of the governor of New Mexico; A. A. Andreas, state geologist, New Mexico; and Glenn Staley, state proration umpire, New Mexico. Gov. Leon Phillips of Oklahoma will attend or send a representative. Texas and California officials have already presented their views and Illinois, Nebraska, Mississippi and Louisiana have not yet indicated they will appear.

Industry representatives so far asked to appear include: George A. Hill, of Houston Oil Co., production vice president, American Petroleum Institute; R. J. Schilthuis, Humble Oil & Refining Co.; Charles V. Millikan, Tulsa, Amerada Petroleum Corp.; R. E. Allen, Los Angeles, representing California oil industry; G. E. Robinson, St. Louis, Shell Oil Co., Inc.; John M. Lovejoy, Seaboard Oil Co.; Forest D. Dorn, Forest Oil Co., Bradford, Pa.; Paul E. Hadlick, National Oil Marketers Association; and William E. Kemnitzer.

DEATHS

JOHN B. TONKIN, 64, who retired in February 1936 as president of the Peoples Natural Gas Co. and affiliated companies at Pittsburgh after serving 42 years with various subsidiaries of Standard Oil Co. of New Jersey, died January 25 at Miami Beach, Fla. He was born at Tidioute, Pa. The family moved to Ohio in 1887 when his father became manager of Northwestern Ohio Natural Gas Co. He obtained his first full-time job in 1894 as pipe-line superintendent's clerk with the River Gas Co. at Marietta, Ohio. The family moved to Oil City in 1894 when his father became assistant general manager of the natural-gas interests of Standard Oil Co. In 1898 when Hope Natural Gas Co. and East Ohio Gas Co. were formed Captain Tonkin was selected as general bookkeeper. He was transferred to Pittsburgh in 1902 as treasurer of Hope Natural Gas Co. In 1918, he was elected vice president and general manager of Peoples Natural Gas Co., becoming president in 1933, succeeding Christy Payne. He also became president of Columbia Natural Gas Co., Lycoming United Gas Corp. and affiliated companies, having been vice president of those since 1930. He was a director and past president of the Pennsylvania Natural Gas Men's Association, a director of the Natural Gas Association of America and had served as chairman of the natural-gas department of the American Gas Association.

JOHN B. TONKIN

EUGENE COSTE, 81, internationally known petroleum geologist and discoverer of several important Canadian gas fields, died at Toronto January 22. Born at Amherstburg, Ont., and a graduate of the Ecole National Superieure des Mines at Paris, France, Mr. Coste was later associated with the Geological Survey of Canada. In 1889 as a private mining engineer he opened the Essex gas field, which for some years supplied Detroit; and discovered the Welland field, on the strength of which the Provincial Natural Gas Co. was formed. In 1906 with his brother, D. A. Coste, he formed the Volcanic Oil & Gas Co., which piped gas from the Tilbury field to Chatham, and from which gradually developed the present Union Gas Co., supplying gas to Windsor, Chatham, Sarnia, London, Hamilton, and other western Ontario communities. In 1909, while employed by the Canadian Pacific Railway, Mr. Coste discovered the Bow Island gas field in Alberta, and, securing control in 1912, organized the Canadian Western Natural Gas, Light, Heat, and Power Co. to build a 165-mile line to Calgary, at that time the longest in the world. Later, he was associated with the development of the Viking gas field which supplies Edmonton, Alta. In recent years he organized the firm of Eugene Coste & Co., of Toronto, consulting petroleum engineers.

JOSEPH G. WHITAKER, 74, vice president of Omar Refining Co., died January 30 in a Tulsa hospital. He was a native of Glenside, Pa. He is survived by two sons, Fred S., president of Omar Refining Co., and J. M., vice president.

JOHN DYSON, 75, pioneer oil driller, died at Electra, Tex., January 28.

THE MARKETS*

CRUDE OIL: Production in the United States fell off 3,284 bbl. per day in the past week. An unexpected drop in Illinois production of 9,813 bbl. per day, despite the completion of a number of large Devonian-lime wells, indicated a temporary slowing up of pipe-line runs from leases.

REFINERY: Domestic fuel buoyant in all areas east of California, and heavy industrials stronger. Gasoline unsteady, with mounting stocks becoming a more serious problem each week. Natural gasolines at new lows, but there is a feeling in the trade they have touched bottom. Lubricating oils much softer in the East, but holding fairly well in the interior. Wax losing ground.

TANK WAGON AND POSTED DEALER: Standard of Kentucky announced a downward revision of 3 cents in consumer tank-wagon prices of gasoline throughout most of its territory. Standard of Indiana adjusted kerosene prices at scattered points.

FINANCIAL: Oils moved in a narrow range, creeping slightly above the level of the previous week. Average of 30 representative stocks for week ended January 27: High, 26.37; low, 25.64; close, 26.01. Week ended January 20: High, 26.32; low, 25.48; close, 25.96.

*Detailed information in market section.

Mississippi to Encourage Its New Oil Industry

By GEORGE WEBER

JACKSON, Miss., Jan. 29.—Encouragement of a growing oil industry in Mississippi is the pronounced aim of the state's new administration. Aware of the growing importance of oil attending the state's first commercial production, officials anticipate measures promoting continuation of the industry's interest in Mississippi.

Gov. Paul B. Johnson, in an interview with the writer last week, expressed himself in favor of action which would invite further exploration for oil and gas in Mississippi. He further stated that he would like to see establishment of a refinery to process the state's current production at Tinsley. His interest in Mississippi's new role as a producing state will prompt his attending the hearings before the Cole committee in Washington early in February, if his new duties as governor do not prevent it.

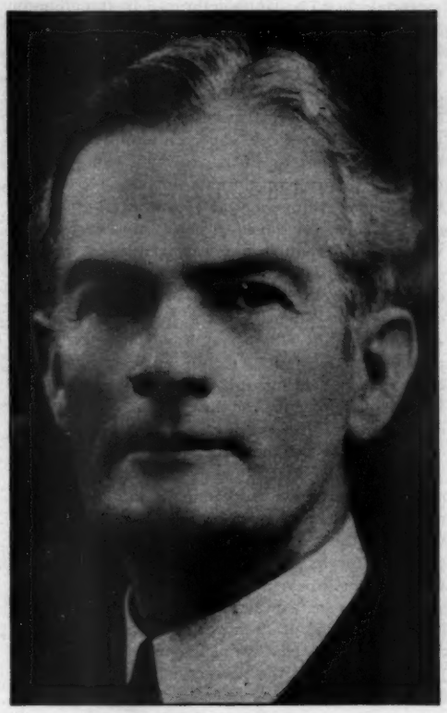
The course of definite legislative action concerning the oil industry is only intimated at this date. While the legislature has been in session since early this month, little action was taken, pending the governor's inaugural January 16 and his subsequent action after assuming office. Four subjects seem slated for attention, however; enlargement of the state Oil and Gas Board, revision of severance taxes on oil, taxation of mineral rights, and passage of a conservation act.

The last-named subject is of particular interest to the oil industry. The governor expects that it will come before the attention of the house within the next few days. However, since appointment of the conservation committee by Speaker of the House Sam Lumpkin was delayed, the committee will not have the opportunity to study the bill sufficiently to present it probably for several days.

Rep. Allen Thompson of Hinds County heads the conservation committee and Edgar Misterfeldt of Rankin County is vice chairman, presiding over the subcommittee on oil and gas conservation. It is assumed that the committee will base its action on a draft of the Mississippi oil and gas conservation bill, which was drawn up and introduced on February 8, 1938. This bill, a model conservation instrument comprising the best points of similar bills enacted in other states, was considered by the senate committee in the session of 1938. It was amended following discussion in committee hearings at that time, but although the senate committee recommended that the "bill do pass," no action was taken by the house committee and the bill was not voted on by either the senate or house.

The bill's chance of passage, and its exact form and amendments are all matters of conjecture at this time. In apparent contradiction to a conservation stand, Governor Johnson is reported to have stated that he is not in favor of proration until Mississippi produces more oil than she consumes. This attitude, suggestive of that in Illinois, may be tempered with what state officials and legislators consider as "proration" and what in their estimate constitutes "conservation." The conservation bill, based on prevention of waste, will preclude Mississippi's repetition of the current Illinois threat, should her production become appreciable, without resorting to the degree of "proration" to which officials may be referring. It is similar to Arkansas' present act, which has given that state what is considered the most orderly and equitable administration of any oil state.

Again, the extent to which revised and added taxes may constitute discouragement of the state's oil development in the opinion of its leaders is not now known. In his inaugural address, Governor Johnson stated, "I recommend the passage of a severance tax on all timber, oil and other products severed from the earth. The so-called 'severance tax' that now appears on the statutes of Mississippi is worthless and should be repealed."



GOV. PAUL B. JOHNSON

He also stated, "I would like to see a tax on mineral rights now held by virtue of lease holds now owned by individuals and corporations. Also the mineral rights retained by those who have sold and conveyed the land but retain these mineral rights. It is unfair to the taxpayers, who pay taxes on other property, to permit the holders of valuable property rights to escape taxation. If we enact these suggestions into law, and enforce the law, it will not only produce more revenue for the state, but it will promote development of valuable resources."

Legislative action on these two proposed tax measures will follow further recommendations of the governor, it is expected.

Operations in Mississippi Handicapped by Snow

JACKSON, Miss., Jan. 29.—Leasing continued to increase in Mississippi and northwestern Alabama the past week. Low temperatures and snow caught many drilling operators in wildcat and field locations unprepared and shutdowns were numerous. Frozen dynamite and bad roads halted some geophysical crews but activity continued in most cases, centered in North Central and East Central Mississippi where 59 crews are active, and in Alabama where four parties are stationed.

Several new wildcat tests to be started commanded attention. In Attala County, contract has been let to J. C. Hawkins of Tyler, Tex., for a 6,000-ft. wildcat to be drilled in the NW NE SW Section 18-14n-6e, for the L. W. Dennis interests. This tentative location, No. 1 Ellis, is one of a pair of wildcats planned by these interests in Attala and Holmes counties.

Royal Oil & Gas Co., having acquired a 12,000-acre lease block in the Raymond area of Hinds County from Caddis and others, plans a wildcat test to be started by April 12, within a 3-mile radius of Section 23-3n-2w. This prospect is being checked by geophysics.

A Copiah County wildcat is scheduled on a proposed location in NW NE Section 19-1n-3w, following an agreement between Gulf Refining Co. and J. S. Wheelis. It is reported to be an 8,500-ft. test. Another Wheelis project may develop in Jones County, on a block in Township 6n-12w, held by Gulf and Sun Oil Co. The proposed 5,000-ft. test may be located in NE SW Section 1-6-12. A Humphreys County wildcat scheduled to begin by May 15 is reported by an operator who is adding to his block at present.

Two Yazoo projects are in the making. The Kingwood Oil Co. is dealing with Exchange Oil Co. for a half interest in the Kingwood block in Township 12n, Ranges 2e and 3e, on which a test in NW¼ Section 36-12-2 is to be drilled. Robert P. Lake, who has staked a location for No. 1 Exum estate in the SW NE Section 13-11-2, is reported to anticipate spudding by February 15.

In addition, Transwestern Oil Co. will shoot a 25,000-acre block assembled by O. R. Reed in Tallahatchie and Leflore counties and take a minimum of 10,000 acres for a test to be started by May 15.

Established wildcat locations in Attala, Lauderdale and Sharkey counties are scheduled to start on February 1. Drilling may not be continued subsequent to spudding, however, since many such operations shut down to continue lease selling. It is reported that T. B. Slick, Jr.'s No. 1 Atkinson, a northwest outpost wildcat to the Tinsley field, Yazoo County, may be deepened to 8,500 ft. It was abandoned at 5,083 ft., but derrick was left standing and the hole plugged so operations may be resumed. The Slick well was abandoned before Edgar Johnson brought in a mile north extension to Tinsley, and the possibility of further faulting to the north and west may result in deeper production in the locality of the Slick test.

In Georgia, Georgia Resources, Inc.'s No. 1 Gillican is reported to have set 10¾-in. casing at 736 ft. in hard lime. The company, which holds 75,000 acres under lease in the vicinity of the Clinch County wildcat, is planning two additional wildcats.

Total producers in the Tinsley field of Yazoo County reached 16 over the week end, with two additional wells nearing completion early this week. A dry hole on the east brought the total failures to two last week, with a third, Union Producing Co.'s No. 1 Stevens nearing abandonment from water intrusion.

Production in the field averaged 4,650 bbl. daily last week, with all wells pinched down to about 300 bbl. per well daily. The potential production of the field is estimated at 19,000 bbl. daily. The second loading rack in the field is in operation, with two north wells flowing directly to tank cars pending completion of storage. All remaining wells are finding outlet through the Tinsley loading rack, where storage is provided, and tank-car shipments are moved to the Standard Oil Co. refinery at Baton Rouge. No further information regarding an outlet for the crude after February 1 has been released. Standard Oil Co. gave notice several weeks ago that it will stop purchases on that date. Some believe an extension of purchases will be announced, and a further possibility of continued outlet is through Hassie Hunt, who has announced an export market for several thousand barrels weekly.

(Mississippi and Alabama wildcat report on Page 73).

James F. McManmon Appointed Business Emissary of Bank

A. E. Bradshaw, president of the National Bank of Tulsa, announces the appointment of James F. McManmon as business emissary.

Mr. McManmon's activities will be largely devoted to the oil and gas interests of the bank. Having been engaged in these industries for nearly 20 years as a successful independent operator, Mr. McManmon enjoys a broad field of acquaintanceship among oil men as well as in banking circles throughout the country.

Service in the World War and graduation from Princeton were immediately followed by Mr. McManmon's entrance into the Mid-Continent oil industry in 1921. His uninterrupted connection with the industry since that time has included all phases of oil operations.

Capture vs. Spacing

(Continued from Page 14)

acreage. The Oklahoma statute was upheld in an order testing this plan of handling the small-tract problem in Patterson v. Stanolind Oil & Gas Co., 182 Okl. 155, 77 P. (2d) 83 (1938). An appeal to the U. S. Supreme Court was dismissed for want of jurisdiction. See 59 S. Ct. 259 (1939). Of the four largest oil-producing states Oklahoma has the best method. Texas, which ranks first in amount of daily production, is operating under a plan that has proved unwise; California, while second in production, has rejected the Atkinson bill; and Illinois, which has risen to fourth place in production, failed to enact the model bill proposed for it at the last session of the legislature.

The Oklahoma type of statute has found favor in other states as in New Mexico (1935), Louisiana (1936, with a new comprehensive Act of 1939), Michigan (1939), and Arkansas (1939). The Arkansas statute has a provision for a compulsory one-well drilling unit, with a proviso that if this be held invalid where the unit is composed of several tracts of different owners, then each part owner is to have the right to drill with production allocated according to the proportion that the particular owner's part bears to the whole unit.

There is one further question which I would like to discuss before concluding, and that is how large should the drilling or spacing unit be? In the first place, no spacing plan is applicable where the field has already been developed or substantially drilled and developed at the time the drilling unit is determined upon. In the second place, as to areas to which a spacing plan can be applied, there is primarily, from the standpoint of the public, an engineering problem to secure the greatest ultimate recovery, and secondarily, from the standpoint of the owner of the oil rights, there is an economic problem, of how to adjust the spacing regulations so as to produce a reasonable profit on the investment in a reasonable time; and lastly, there may be a legal question of how far the administrative body can go in regulating the size and shape of the spacing unit. In the past perhaps the most common practice has been to have 10-acre units, regardless of underground factors, but this, as pointed out by Professor Cloud in his book "Petroleum Production," Page 58, "is probably the most common economic engineering absurdity employed in the oil industry at the present time." Engineers have suggested various formulas. For example one by W. W. Cutler reads like this: "The recovery from wells of equal size producing under similar conditions in the same pool, is proportional to the average distance that the oil moves to get to the well." But others have pointed out that this was based on experiments where there was a gas drive and the sand conditions were practically uniform, so that it would not hold true under other underground conditions. Then there are the formulas of Haseman, Phelps and Young based on mathematical considerations. But since there does not seem to be any unanimity of opinion even among engineers, I am afraid the layman and the lawyer will have to leave them fight it out among themselves. However, the engineers are pretty well agreed on the fundamental elements that should be considered in determining whether there is to be close or wide drilling. A fine-grained or tight sand with heavy or viscous oil would call for rather close spacing, while a porous sand with oil not viscous and ample gas pressure would require wider spacing, and a thick sand would support more wells economically and from the standpoint of maximum recovery than a thin sand.

In this connection I would again like to refer to Oklahoma's splendid statute, which so carefully and explicitly enumerates the facts to be considered. Section 4b provides:

"In establishing a well-spacing or drilling unit for a common source of supply hereunder, the acreage to be embraced within the unit and the shape thereof shall be determined by the commission from the evidence introduced at the hearing, and the following facts, among other things, shall be material: (1) The lands embraced in the common source of supply as then defined; (2) The plan of well spacing then being employed in said source of supply; (3) The depth of such producing wells as may already have been completed therein; (4) The thickness, porosity, and permeability of the producing sand in said source of supply; (5) The nature and character of the reservoir energy found therein; (6) The formations encountered in any wells then drilling in said source of supply; (7) Cores taken from said source of supply; (8) The history and producing characteristics of wells in other sources of supply producing from the same or similar formations; and (9) Any other available geological or scientific data pertaining to said source of supply which may be of probative value to said commission in determining the proper spacing and well-drilling unit therefor, with due and reasonable allowance for the correlative rights and obligations of the producers of oil and royalty owners interested therein."

There is a tendency toward wider spacing at the present time. From an economic standpoint this may be hard on those who have a large sum invested in their acreage, although it may be compensated for in part by the fact that with fewer wells each will have a larger share of the top allowable. And from a practical standpoint it appears logical to begin with a larger unit and later if conditions warrant, closer spacing might be adopted. In Arkansas since the passage of their new act in February 1939, all spacing has been in 40-acre units, and according to reports a maximum of recovery is being had with a minimum of wells.

Definition of Drilling Unit

In Oklahoma's statute (Section 4a) it is provided: "The drilling unit shall not exceed ten (10) acres in size, unless eighty per cent (80%) or more of the lessees of record as of the date of bringing in the first well and owning at least eighty per cent (80%) of all the acreage embraced within the probable producing area of the common source of supply agree to a larger unit, but in no event shall such a drilling unit exceed forty (40) acres."

This provision of our statute has been tested in the recent case of Croxton v. The State of Oklahoma and the Corporation Commission, No. 28,863, (November 21, 1939), wherein the 80 per cent provisions were upheld although this was confined to lessees of record at the date of bringing in the first well. The court also upheld the right of the commission to establish triangular spacing in 20-acre units, as the statute authorizes the commission to determine the shape of the unit. In this case there was also an attack upon the provision which deals with situations where two or more separately owned tracts are embraced in the same unit, and the Patterson case was reaffirmed. There was also a contention in this case that the order was conflicting and inconsistent in that the order itself directed that each well "shall be drilled on the approximate center of each such triangular unit as near as practicable," while the plat of this area placed the wells in the center of 10-acre squares, which it is claimed is 155.5 ft. from the true center of the triangular unit. It is submitted that if this mathematical center of area is used for locating the well, this would bring the wells in the two triangles too close for proper spacing. But the court decided that "a comparison of the order and the plat revealed no patent ambiguity or repugnancy between the two." In view of the fact that this decision was by a divided court of six against three, what will be the fate of the commission order of November 9, 1939, as to the Pace pool, where after ordering 20-acre triangular spacing units, it provides "that each well drilled in said pool shall be located in the approximate center of a unit, and the center of each unit shall be the same as the center of a 10-acre unit, which would result in what is commonly known as a staggered 10-acre drilling pattern"? The statute (Section 4b) provides "the order shall direct that where a unit is held or owned as an entirety the well permitted that unit shall be located as near the center thereof as may be. The purpose of the order as made in the Pace pool is quite understandable, as by placing the two wells in the centers of 10-acre squares, should it be deemed desirable to drill closer later, the pattern is not spoiled but would permit wells to be placed in the centers of the other two 10-acre squares.

Another Location Problem

There is another off-center location problem which may some day come to the court for consideration, although I think it is distinguishable from the one just mentioned. In Section 4b is the proviso:

"If such a unit is located on the edge of a common source of supply and adjacent to a producing unit, then upon application, notice and hearing before the commission, in conformity with the procedural requirements of Chapter 131, Session Laws of Oklahoma, 1933, by order of the commission, the well on such a unit may be drilled at other than the approximate center."

But if such permission is granted, is not the owner of the adjoining tract, higher on the structure, being treated unfairly unless the allowable of the edge unit is adjusted to take this into account? The 1939 Michigan Act specifically provides that a reasonable deduction in the allowable shall be made. Perhaps under the Oklahoma statutory authorization to protect correlative rights the commission could adjust the allowable accordingly.

In conclusion may I say that where there are so many difficult and complicated problems involved as in the subject under discussion, and where there are so many conflicting interests, it is only by cooperation of all interested parties that the best results can be obtained. The State of Oklahoma is to be congratulated upon having adopted a statute embodying the, as yet, best known plan of spacing. I think the state is also to be congratulated upon having a competent administrative agency to make and enforce equitable regulations, one that has been striving for a long time, and, in a great measure, has succeeded in securing the necessary cooperation of those engaged in the oil industry.

Nebraska Legislators Visit State's First Oil Field

Members of the Nebraska Unicameral Legislature were guests last week of the Lincoln Chamber of Commerce, which chartered a special train to take the group to inspect the oil developments at Falls City. They were entertained at a dinner by the Falls City Chamber of Commerce.

A warning to the lawmakers not to kill the state's newest industry in its infancy by excessive taxation was sounded by F. A. Hebenstreit, president of the Falls City chamber, voicing the plea that developments not be hindered by burdensome regulations, restrictions and severance taxes. Sen. Amos Thomas, Omaha, echoed Mr. Hebenstreit's warning, asking that time be given to the industry to gain a foothold before restrictive regulations were inflicted.

International

Mexico . .

Washington Policy Is Criticized by Standard

PLANS for drilling up to 30 wells south of the Panuco River have been announced in Mexico City by Carlos Almazan, director of Compania Veracruzana Petrolera, S.A., a Japanese-controlled company. There have been reports of the assembling of drilling equipment for several months from scattered sources. The machinery obtained is said to be of secondary condition.

There is no clean-cut assurance so far that the oil, if exploratory work is successful, will go to Japan, although limited shipments through the Panama Canal are probable under such circumstances. This traffic, however, involves two crossings of the Atlantic and two canal tolls. The Tehuantepec Railroad terminating on the Pacific at Salina Cruz is not in condition to handle much oil traffic without complete reconstruction.

Meanwhile, the "leniency and courtesy" shown by the State Department at Washington has "played into the hands of Mexico" in the expropriation question, it was charged by Standard Oil Co. of New Jersey in a statement issued at Washington last week.

"They have stiffened the Mexican Government in its determination to take what it wants, whether or not it can pay for it, in complete disregard of the rights of Americans and other foreigners, and in violation of its own laws and international agreements," the statement said.

"The whole structure of international business relations is endangered. If private property can be taken at will and no fair, prompt, and adequate payment made for it, the whole basis of relations between states is undermined."

The statement said the State Department had clearly stressed this itself in a note which Secretary Hull sent to Mexico in 1938, but the company implied that, so far, the department had not strongly pressed Mexico for satisfaction in accordance with this principle.

"The responsibility for the maintenance of this principle rests in the hands of the Department of State," it said. "Should that department, for any reason, too long delay in taking the necessary steps to meet Mexico's challenge to the principles of right and fair dealing between nations, it may, by its very patience, encourage other nations to attempt wrongs similar to those which Mexico has inflicted—the lasting injury of international justice and friendly intercourse.

"Unless the State Department vigorously defends American business interest in Latin America when these are wronged by a Latin-American government, the 'good neighbor' policy will become little more than an empty phrase. International relations rest on international morality."

Mexico's crude-oil production in November dropped to 3,576,426 bbl., a daily average of 119,214 bbl., according to statistics supplied by the U. S. commercial attache in Mexico City. This compares with total production of 4,536,344 bbl. in October, a daily average of 346,344 bbl.

The November production was divided, 3,099,505 bbl. of light oil and 476,921 bbl. of heavy oil. The October production consisted of 3,982,805 bbl. of light oil and 553,539 bbl. of heavy oil.

Petroleum exports from Mexico in November totaled 1,040,436 bbl. against 1,321,942 bbl. in November 1938. Exports of petroleum and products by countries and Mexican tariff classifications during September 1939, the most recent month for which details are available, follow:

(Note: A cubic meter equals 6.2905 U. S. bbl. of 42 gal. The Mexican peso was quoted Jan. 25 at 16.85 cents.)

EXPORTS OF CRUDE OIL WITH A DENSITY OF 0.96 OR LOWER

(Tariff Fraction 228-A)

Country—	Cubic meters	Pesos
United States	80,942	1,991,174
Land's End	20,934	514,976
Italy	21,488	528,605
Japan	3	74
Manchuko	101	2,485
Total	123,468	3,037,314

EXPORTS OF CRUDE OIL WITH A DENSITY HIGHER THAN 0.96

(Tariff Fraction 228-B)

Country—	Cubic meters	Pesos
United States	21,933	330,530

EXPORTS OF FUEL OIL

(Tariff Fraction 228-C)

Country—	Cubic meters	Pesos
United States	4,693	84,567
Italy	2,832	51,032
Netherlands	828	14,921
Cuba	220	3,964
Denmark	50	901
Norway	894	16,110
Sweden	1	18
Uruguay	3,231	238,423
Total	22,749	409,936

EXPORTS OF GAS OIL

(Tariff Fraction 228-D)

Country—	Cubic meters	Pesos
United States	53	1,452
Germany	20	548
Italy	653	17,892
Japan	60	1,644
Denmark	902	24,715
Norway	449	12,302
Sweden	494	13,536
Total	2,631	72,089

EXPORTS OF REFINED GASOLINE

(Tariff Fraction 228-F)

Country—	Cubic meters	Pesos
Germany	1	53
Japan	3	157
Manchuko	1,207	63,211
Total	1,211	63,421

EXPORTS OF KEROSENE

(Tariff Fraction 228-H)

Country—	Cubic meters	Pesos
Italy	1	18
Japan	3	54
Norway	1	18
Manchuko	1,004	18,072
Total	1,009	18,162

EXPORTS OF LUBRICANTS AT 20° C.

(Tariff Fraction 228-I)

Country—	Cubic meters	Pesos
United States	2	576
Germany	1	288
Japan	2	576
Norway	2	576
Uruguay	9	2,597
Total	16	4,613

EXPORTS OF ASPHALT

(Tariff Fraction 228-J)

Country—	Cubic meters	Pesos
Denmark	3,163	153,374
Australia	1,464	70,989
Total	4,627	224,363

Egypt . .

Increased Output During 10 Months

CRUDE-OIL production in Egypt in October totaled about 423,408 bbl., according to official statistics. Ten months' production in 1939 totaled 3,832,692 bbl., an increase of 2,648,799 bbl. over the same period in 1938.

England . .

Over Million Barrels Seized as Contrabrand

APPROXIMATELY 850,000 bbl. of petroleum products have been intercepted by the British Contraband Control and deferred to uses of French and English industries and armed forces. The oil intercepted has been consigned to Germany or to neutral countries that the British Navy suspected might transship the products to the Reich.

The figure of 850,000 bbl. supplied to the Petroleum Times of London by the Ministry of Economic Warfare does not include seizures made at French-controlled contraband stations and patrols. It might be assumed safely that the French seizures have perhaps been as much as half of those claimed by the British, which would bring the total to something like 1,250,000 bbl. captured since the war started.

In view of the nature of warfare so far, the 1,250,000 bbl. of petroleum seized as contraband may have exerted an important influence on the petroleum purchases by France and Great Britain in the United States and other available sources of supply.

The current basic petrol ration books for private cars and motorcycles expired January 31. New books will cover a period of 3 months ending on April 30. Applications may be made for supplementary allowances for a period of 2 months ending March 31. Owners of private cars and motorcycles are particularly requested not to submit claims for supplementary allowances unless these are needed for essential purposes. The exercise of the strictest economy in the consumption of petrol is necessary.

Russia . .

Soviet Imports of American Gasoline

IN studying various aspects of the moral embargo against Japan and Soviet Russia last week in Washington it was revealed that the United States has exported approximately 1,300,000 bbl. of gasoline to the Soviet since war started. In September, Soviet Russia obtained from the United States 48,000 bbl. of gasoline. In October the gasoline exports from this country to Russia amounted to 318,500 bbl., and in November, 317,000 bbl., a total for 3 months of 883,500 bbl. The complete figures for December are not yet available but there is reason to believe they will be about the same as the total for October and November, roughly 315,000 bbl.

Soviet petroleum exports through the Black Sea dropped to the point of virtual extinction in November, according to the record of freight passing the port of Istanbul. The only shipment reported was of 3,200 tons of asphalt consigned to Belgium. In November 1938 Soviet petroleum shipments passing Istanbul totaled 73,016 tons.

Total shipments for the first 11 months of 1939 were 517,264 tons, compared to 786,193 tons for the same period in 1938. Major items in the 11 months' exports for 1939 were 287,204 tons of fuel oil, 142,059 tons of gasoline, 41,392 tons of lubricating oil, and 35,992 tons of kerosene.

Pipe-Line Activity

On the Lone Star Gas Co. line from the Buffalo field, Leon County, to Bryan, Tex.

Standard Oil Co. (Ind.) Line Transports Several Products

The 170-mile 8-in. pipe line, completed 2 months ago by Standard Oil Co. (Indiana) from the Sugar Creek refinery near Kansas City to Council Bluffs, Iowa, carries gasoline, kerosene and furnace oil. The terminal at Council Bluffs has 13 storage tanks on a 35-acre tract which have a capacity of about 500,000 gal. For operating the line 26 men are employed, 6 of whom are stationed at Sugar Creek.

Magnolia Completes New Gasoline Pipe Line

CORPUS CHRISTI, Tex.—A 139-mile gasoline pipe line running from Corpus Christi to San Antonio has been completed by Magnolia Petroleum Co. It consists of 20 miles of 6-in. pipe and 119 miles of 4-in. The company will construct a bulk station in San Antonio.

Illinois Pipe Line Added More Than 233 Miles Recently

Illinois Pipe Line Co. increased its mileage of trunk and gathering lines in 1939. Additions made, including one expected to be completed shortly, will bring trunk and gathering lines operated by the company to over 5,000 miles as compared with 4,777 miles at the beginning of 1939. Illinois Pipe Line Co. operates chiefly in Illinois, Indiana, Ohio, Kentucky, Texas, Wyoming and Montana.

Texas Pipe Line Co. to Lay 23 Miles From Bay City

HOUSTON, Tex.—Texas Pipe Line Co. is preparing to lay approximately 23 miles of 8-in. welded oil line from the Bay City field, Matagorda County, to the company's trunk-line system at West Columbia, in Brazoria County.

Welding Design and Practice Course at Tulsa University

A special course of instruction in arc-welding design and practice will be given at the college of petroleum engineering, University of Tulsa, February 5, 6, 7, 8, and 9, under the direction of E. W. P. Smith, chief consulting engineer, Lincoln Electric Co., Cleveland, Ohio, and sponsored by the American Welding Society, Tulsa chapter.

The special course is intended primarily for engineers, designers, production executives, and supervisors in charge of welding operations. Mr. Smith will be assisted by expert welding technicians.

To Begin Stringing Pipe On Stanolind Line

The stringing of pipe along the 145-mile oil pipe line of Stanolind Pipe Line Co., from northeastern Ellis County fields to the company's line in Washington County, both in northern Kansas, will begin February 15, weather permitting.

Contracts for Electric Welded Lines Recently Awarded

H. C. Price Co., of Bartlesville, Okla., has been awarded contracts for electric welding and has started construction on the following pipe lines:

For Sohio Pipe Line Co.—250 miles of 12-in. from Stoy, Ill., to Lima, Ohio; general contractors, Sheehan Pipe Line Construction Co. and Truman-Smith Construction Co.

For Panhandle Eastern Pipe Line Co.—140 miles of 22-in. and 24-in. loops in Kansas, Missouri, and Illinois; general contractors, T. R. Jones, Inc., and I. C. Little.

For Shell Petroleum Corp.—10 miles of 6-in. and 8-in. in Illinois; general contractor, I. C. Little.

All of these lines are to be electric welded using the Fleetweld process.

Natural Gas

Natural Gas Sales Increase 8.8 Per Cent in November

November natural-gas sales totaled 116,965,600,000 cu. ft., according to the American Gas Association, an increase of 8.8 per cent over that month in 1938.

Natural-gas sales for 11 months of 1939 were shown at 1,180,870,500,000 cu. ft., an increase of 9.9 per cent.

At the close of the month the industry was serving 7,424,400 customers, an increase of 3.2 per cent. Domestic customers, including those operating house-heating units, totaled 6,850,100, an increase of 3.2 per cent. There were 531,500 commercial customers, a gain of 3.4 per cent; 40,700 industrial users, up 1.8 per cent, and 2,100 listed as miscellaneous.

Industrial consumers, representing only a small percentage of the total users, burned 59,209,000,000 cu. ft. in November, a little more than 50 per cent of the total. Domestic consumers burned 30,678,700,000 cu. ft., and 15,547,100,000 cu. ft. were utilized in generating electricity.

New Oklahoma Gas-Delivery Record in Cold Wave

Previous high records for gas delivery in Oklahoma were broken in the first 21 days of this year, according to records of the Oklahoma Natural Gas Corp., serving many communities and cities in the state.

The company delivered 3,833,687,000 cu. ft. of gas to its customers in the 21-day period, during which the average temperature was 21°. In the corresponding period of 1939, when the average temperature was 44°, the company delivered 2,345,673,000 cu. ft. of gas.

The biggest single day's delivery was on January 18 when a total of 235,034,000 cu. ft. of gas was pumped into the distributing lines. The previous single day's record was made January 17, 1930, when the company delivered 221,539,000 cu. ft. to its customers.

Deliveries passed the 200,000,000-cu. ft. mark on 6 days of the current 21-day period. On January 18 it took 50,000,000 cu. ft. of gas from its connections in the Cement field, Caddo County, for delivery in Oklahoma City. The Cement field provided all the gas needed in Oklahoma City during the period, gas produced at Oklahoma City being used in the field. The Bearden, Quinton and other fields provided the gas delivered to customers in Tulsa and other eastern Oklahoma towns.

Louisiana-Nevada Transit Files Plans in Arkansas

SHREVEPORT, La.—A new financial setup to conform to an order of the state Utilities Commission of Arkansas has been proposed by the Louisiana-Nevada Transit Co. which was recently issued a permit to distribute natural gas in South Arkansas. W. A. Delaney, Jr., chairman of the company's board of directors, has submitted a plan whereby the company will furnish in cash, 30 per cent of the total cost of the distributing system, the remaining 70 per cent to be covered by mortgage held by T. R. Jones and Boettcher interests and Mr. Delaney, the mortgage to be amortized over a period of 17 years. Full details of the new plan will be studied by the commission before action is taken.

The company proposes to move gas from the Cotton Valley field of Webster Parish, North Louisiana, to South Arkansas where it will be distributed in the Hope area, in competition with an existing system of the Arkansas-Louisiana Gas Co.

New Low-Pressure System For Turner Valley Gas

TURNER VALLEY, Alta.—Work is in progress on the construction of a new low-pressure natural-gas distributing system for Turner Valley, replacing the original high-pressure system. Valley Gas Co. will handle distribution, purchasing scrubbed gas from Royalite Oil Co.

Vermilion Gas Project Has Been Financed

VERMILION, Alta.—Some $85,000 is being set aside by Franco Oils, Ltd., for construction this year of a transmission line and distributing system to serve the town of Vermilion. Several additional wells will be drilled to provide adequate natural-gas reserves. The system will be operated by Public Service Co., a Franco subsidiary.

Refinery Expansion

Continental Starts $4,000,000 Refinery at Lake Charles, La.

LAKE CHARLES, La.—Preliminary work will get under way immediately for construction of a $4,000,000 refinery near Lake Charles, La., by the Continental Oil Co., of Ponca City, Okla. The announcement verifies reports current for several years that the company would establish refining facilities in the coastal area. The plant site is at Westlake.

State tax exemption for 10 years was granted the company, under the program of the Louisiana State Board of Commerce and Industry, designed to attract industry to Louisiana.

The company will make an announcement later regarding equipment which will be installed at the new plant. No changes are contemplated in the operation of the company's refinery at Baltimore, Md.

Clearing of the ground at the refinery site is to start in February. Construction will be started in April; completion of the plant scheduled within a year. Daily capacity of the refinery will be approximately 8,000 bbl. of high-grade gasoline and byproducts. Some of the gasoline will be high octane.

Approximately 500 men will be employed on construction, with a monthly payroll of about $75,000. After completion, the plant will employ slightly more than 100 men with a monthly payroll approximating $37,000.

The refinery will be built on acreage gradually accumulated by Continental since September 1937 immediately west of Westlake alongside the 905,000-bbl. tank farm built there during the past 3 years.

Heretofore much of the crude produced by Continental wells in the Ville Platte field in Evangeline Parish, the Tepetate field in Acadia Parish, and the Abbeville field in Vermilion Parish, and other scattered wells throughout the area, has gone by tanker to the company's refinery at Baltimore, Md.

Production under the January allowable issued this week by the state Conservation Department lists Continental's total production from these three fields at 20,300 bbl. per day, while from Continental's wells in the Lockport field in Calcasieu Parish and the Lake Arthur field in Jefferson Davis Parish an additional 1,030 bbl. of oil may be obtained, bringing the total available production in Southwest Louisiana to 21,330 bbl. daily.

New Record Set by Gasoline Sales in California

SACRAMENTO, Calif.—California motorists burned almost 5,000,000 gal. of gasoline every day during the year, 1939, to set a new record for the use of motor-vehicle fuel, the state Board of Equalization reports.

The actual consumption of gasoline for the 12-month period amounted to 1,810,768,366 gal., or 4,961,009 gal. each day, board records revealed.

"This represents a gain of 5.27 per cent over the previous year which, up to the time of the present report, was the highest in the history of the state," said Fred E. Stewart, Oakland board member. "I believe this is indicative of improved economic conditions throughout California."

El Tejon Is Planning Changes at Refinery

CHICAGO.—In order to increase gasoline production to meet the requirements of its growing business, El Tejon Oil & Refining Co., of Bakersfield, Calif., has asked Universal Oil Products Co. to send engineers to survey the El Tejon refinery and make recommendations to bring its operations into line with Dubbs principles and the latest Dubbs improvements.

This was announced by Gould Fitch, president of El Tejon, who announced at the same time the signing of a license agreement with Universal.

At present the El Tejon refinery is running 2,500 to 3,000 bbl. a day of crude from fields in the Bakersfield area, and is operating a viscosity-breaking unit which produces 22 to 25 per cent of cracked gasoline. The other products are diesel oil, tractor distillate, and heavy fuel oil.

Mid-Continent Petroleum Contracts For Deoiling Wax-Process Unit

Mid-Continent Petroleum Corp. has contracted for the construction of a new Lummus Co. emulsion deoiling wax-process unit in its modernization and expansion program at the Tulsa refinery. The first commercial application of this process was installed at Bradford, Pa., and is just now going on stream.

Molten slack wax is emulsified with a nonviscous, nonsolvent liquid. Emulsified mixture is fed to a basket-type centrifugal, lined with a filter medium. Water and oil are thrown out and the wax cake travels slowly up the basket and is continuously discharged. The process is planned to increase wax production and to produce a high melting-point product practically free of oil.

Natural Gasoline

Huber Installs Purifying Equipment at Borger

PITTSBURGH, Pa.—Koppers Co., engineering and construction division, has been awarded a contract for a Seaboard process type of liquid purification plant at Borger, Tex., for the J. M. Huber Corp., manufacturer of gasoline and carbon black.

The plant will be employed to remove hydrogen sulfide from natural gas which is to be used in the manufacture of carbon black.

This will be the largest plant ever built for the purification of natural gas, it is stated. It will have a capacity of 70,000,000 cu. ft. of gas a day.

Adoption of the Seaboard process will comply with limitations recently placed upon the sulfur concentration in carbon blacks by some purchasers. It also is intended to meet conditions resulting from the increasing restrictions on the use of "sweet" gas for the production of carbon black.

In addition to making possible an improved product, it is stated that the cost of maintenance will be reduced by the reduction of corrosion in all plant equipment.

The purification plant will be located ahead of the gasoline absorption plant and will be designed to materially reduce the hydrogen sulfide content of both the gasoline and the carbon black.

Seaboard process type of purification plant is a continuous absorption and actification process in which the gas is scrubbed in an absorber tower with a solution of sodium carbonate. The solution, after leaving the absorber, goes to a second similar tower, an actifier, where it is aerated by a stream of air forced in by a blower. In this tower the solution gives up its hydrogen sulfide and becomes ready for use again in the absorber.

Roeser & Pendleton, Inc., Plan Recycling Plant

GLADEWATER, Tex.—Roeser & Pendleton, Inc., contemplate construction of a 10,000,000-cu. ft. plant to strip condensate from the gas-distillate wells in the northwest part of the Cayuga field. Location staked for the new gas-recycling plants is on the Virginia Wills Bower lease, Everett Ritter Survey, Anderson County, Texas.

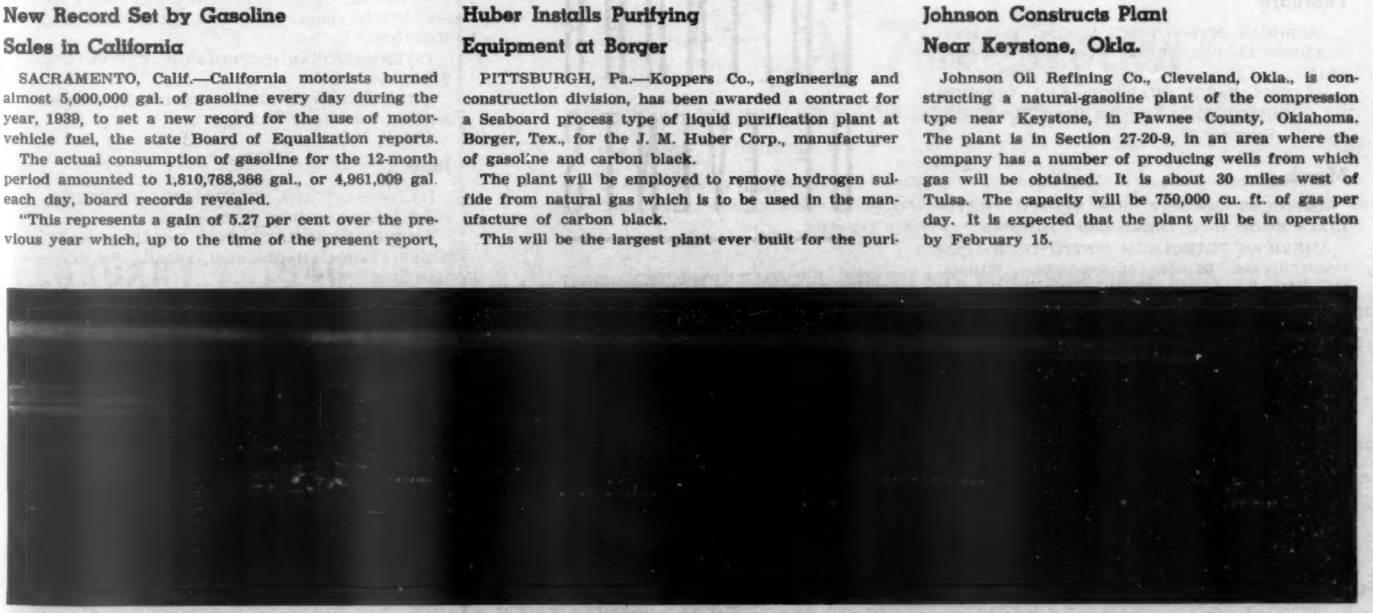
Gulf Plains Will Build Recycling Plant

Robert T. Wilson, Clyde Alexander, and John J. Sheerin, independent operators of Corpus Christi, Tex., have formed the Gulf Plains Corp. and have entered into a contract calling for the construction of a recycling plant to be located near Corpus Christi in Nueces County. Construction of a 60,000,000-cu. ft. plant will start February 1. The plant site is between the Stratton and South Agua Dulce fields of Nueces County.

The plant is to be ready for operation September 1. The corporation assembled a block of 6,020 acres in the area, 4,400 acres of which was on assignment from Texon Royalty Co.

Johnson Constructs Plant Near Keystone, Okla.

Johnson Oil Refining Co., Cleveland, Okla., is constructing a natural-gasoline plant of the compression type near Keystone, in Pawnee County, Oklahoma. The plant is in Section 27-20-9, in an area where the company has a number of producing wells from which gas will be obtained. It is about 30 miles west of Tulsa. The capacity will be 750,000 cu. ft. of gas per day. It is expected that the plant will be in operation by February 15.



Night view of Socony-Vacuum Oil Co., Inc. (White Eagle) refinery at Augusta, Kans.

PROGRAMS AND MEETINGS

Program for Spring Meeting Of A.P.I. at Wichita, Kans.

The American Petroleum Institute spring meeting of the Mid-Continent District Division of Production is to be held in Wichita, Kans., March 14-15.

Gov. Payne Ratner will talk in regard to Kansas oil problems. Other papers to be delivered are a talk on the Cole bill: Foremanship; Oil Meters of the Positive Displacement Type in Production Work; Cable-Tool Drilling; Panhandle Texas Well-Spacing Problems; Panhandle Well Completion Problems; Water Flooding in Southeastern Kansas and Northeastern Oklahoma; Conservation in the Production of Petroleum; Secondary Recoveries in the Oklahoma City Pool; Corrosion; Salt-Water Disposal Problems in Fitts; Controlled Oil Withdrawal Rates; Recent Developments in Oil Well Cementing, and a moving picture entitled Oil Well Cement; Pumping Problems in the Mid-Continent Area; Larger Gas Fields in Kansas, and Oil Financing. The authors will be announced later.

The general committee is composed of H. E. Miller, chairman, Lario Oil & Gas Co.; R. E. Adams, Cities Service Oil Co.; L. R. Pickerill, Tom Johnson, Inc.; A. S. Ritchie, McPherson Drilling Co.; H. W. Cardwell, Cardwell Manufacturing Co., and Mrs. G. A. Holloway.

Thursday evening, March 14, a stag buffet dinner has been arranged. The annual dinner is to be held on the following evening. At noon, March 15, a ladies' luncheon and bridge will be given.

The Allis Hotel is convention headquarters.

Scouts Association Meets In Little Rock, May 16-18

The National Oil Scouts and Land Men's Association has picked Little Rock, Ark., for its 1940 convention, to be held May 16, 17, and 18. At a meeting in Shreveport, La., last week, officers completed plans for the convention, at which an attendance of 1,000 is expected. Jake Brandt, of Texas Co., Shreveport, heads the committee in charge of arrangements, comprising Harry Norris, Sinclair Prairie Oil Co., Shreveport; N. C. Hoover, Shell Oil Co., Inc., El Dorado, Ark.; C. H. Geiger, Standard Oil Co., El Dorado; J. B. Story, Magnolia Petroleum Co., Jackson, Miss., and Bill Cox, Texas Co., Jackson.

Venezuela Considers Building For Tulsa Exposition

A building to be constructed by the Venezuelan Government on the grounds of the International Petroleum Exposition was pictured as a possibility for the May 18 to 25 Tulsa oil show following a visit of Dr. Carlos Perez de la Cova, administrative head of the petroleum department of the Ministry of Fomento of Venezuela to Tulsa.

General Manager W. B. Way, of the International Petroleum Exposition (center), discusses plan for building for the 1940 Tulsa oil show with representatives of the Venezuelan Government, who visited Tulsa to make plans for exhibits. Left is J. Martorano with Dr. Carlos Perez de la Cova, administrative head of the petroleum department of the Ministry of Fomento from the Venezuelan Government

Dr. Cova, who, with J. Martorano of the Venezuelan petroleum department, conferred with exposition officials, indicated he is sending a recommendation concerning such an exhibit to his government. The Venezuelan representatives conferred with W. G. Skelly, president of the exposition, and General Manager Way.

Mr. Way predicts the largest foreign attendance in the history of the exposition with advance notifications already received from Rumania, Turkey, Canada, Great Britain, Italy, Mexico, Venezuela, and Greece.

A total of 19 countries was represented in 1938, and Mr. Way believes the number will reach 25 in 1940.

Production Allocation Is Added to A.P.I. Study

Extensive study of methods of allocating oil production has been planned for the recently appointed Special Study Committee on Well Spacing and Allocation of Production of the American Petroleum Institute Production Division Central Committee on Drilling and Production Practice. D. R. Knowlton, Phillips Petroleum Co., Bartlesville, Okla., is chairman of the 1940 study committee, appointed by C. E. Reistle, Jr., Humble Oil & Refining Co., Houston, Tex., chairman of the central committee.

Members of the 1940 committee, besides Mr. Knowlton, are: M. Albertson, Shell Oil Co., Inc., Houston, Tex.; G. S. Bays, Stanolind Oil & Gas Co., Tulsa; W. B. Berwald, Ohio Oil Co., Tulsa; M. G. Cheney, Anzac Oil Corp., Coleman, Tex.; J. E. Gosline, Standard Oil Co., San Francisco; H. H. Hardison, Standard Oil Co. of Texas, Houston; F. E. Heath, Sun Oil Co., Dallas, Tex.; N. M. Hutchinson, Cities Service Oil Co., Bartlesville, Okla.; M. J. Kirwan, Indian Territory Illuminating Oil Co., Bartlesville, Okla.; R. S. Knappen, Gulf Oil Corp., Tulsa; Edgar Kraus, Atlantic Refining Co., Carlsbad, N. M.; H. C. Miller, U. S. Bureau of Mines, San Francisco; R. V. Moore, Humble Oil & Refining Co., Houston, Tex.; W. S. Morris, East Texas Engineering Association, Kilgore, Tex.; E. L. Rawlins, Union Producing Co., Houston, Tex.; C. E. Reistle, Jr., Humble Oil & Refining Co., Houston, Tex.; E. A. Stephenson, University of Kansas, Lawrence; D. B. Taliaferro, U. S. Bureau of Mines, Bartlesville, Okla.; C. D. Watson, Carter Oil Co., Tulsa; F. E. Wood, Standard Oil Co. (Indiana), Chicago; and R. D. Wyckoff, Gulf Research & Development Co., Pittsburgh, Pa.

CALENDAR OF EVENTS

February

AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS, New York, February 12-15.

ILLINOIS BASIN CHAPTER, A.P.I. DIVISION OF PRODUCTION, at Emerson Hotel, Mount Vernon, Ill., February 23.

March

AMERICAN SOCIETY FOR TESTING MATERIALS, Statler Hotel, Detroit, Mich., March 4-5.

AMERICAN PETROLEUM INSTITUTE, Mid-Continent district, Division of Production, Wichita, Kans., March 14-15.

AMERICAN PETROLEUM INSTITUTE, Pacific Coast district, Los Angeles, Calif., March 19.

AMERICAN PETROLEUM INSTITUTE, Southwestern district, Division of Production, Houston, Tex., March 28-29.

April

WESTERN PETROLEUM REFINERS ASSCIATION, annual meeting, Allis Hotel, Wichita, Kans., April 1-2.

AMERICAN CHEMICAL SOCIETY, Cincinnati, Ohio, April 8-12.

AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS, annual meeting, Stevens Hotel, Chicago, April 10-12.

AMERICAN PETROLEUM INSTITUTE, eastern district, Division of Production, Columbus, Ohio, April 11-12.

SOUTHWESTERN GAS-MEASUREMENT SHORT COURSE, University of Oklahoma, Norman, April 16-18.

NATIONAL PETROLEUM ASSOCIATION, semi-annual meeting, Cleveland Hotel, Cleveland, Ohio, April 18-19.

May

PETROLEUM INDUSTRY ELECTRICAL ASSOCIATION, Dallas, Tex., May 1-3.

NATURAL GASOLINE ASSOCIATION OF AMERICA, annual convention, Hotel Tulsa, Tulsa, May 15-17.

NATIONAL OIL SCOUTS AND LAND MEN'S ASSOCIATION, annual convention, Little Rock, Ark., May 16-18.

INTERNATIONAL PETROLEUM EXPOSITION, Tulsa, May 18-25.

AMERICAN PETROLEUM INSTITUTE, midyear meeting, Fort Worth, Tex., May 27-31.

June

ILLINOIS-INDIANA PETROLEUM CONGRESS, eighth annual meeting, Robinson, Ill., June 1.

AMERICAN SOCIETY FOR TESTING MATERIALS, Chalfonte-Haddon Hall, Atlantic City, N. J., June 24-28.

September

NATIONAL PETROLEUM ASSOCIATION, thirty-eighth annual meeting, Hotel Traymore, Atlantic City, N. J., September 18-20.

October

NATIONAL SAFETY CONGRESS, Stevens Hotel, Chicago, October 7-11.

November

AMERICAN PETROLEUM INSTITUTE, twenty-first annual meeting, Stevens Hotel, Chicago, November 11-15.

The Cahokia, Ill., terminal of the Phillips Petroleum Co.'s gasoline pipe line from Borger, Tex., to East Chicago, Ind., shows the variety of tanks required. Tankage includes vertical butane blimps, horizontal butane tanks, spheroid tanks for natural-gasoline storage, 10,000 and 12,000-bbl. floating-roof tanks for blending and 80,000-bbl. tanks for the storage of different grades of gasoline delivered through the line. An article on the construction and maintenance of newest portion of the line starts on the next page

ENGINEERING & OPERATING

FEBRUARY 1, 1940

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PHILLIPS GASOLINE LINE FROM BORGER, TEX., TO EAST CHICAGO
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In the construction of the 275-mile gasoline pipe line built by Illana Co. for Phillips Petroleum Co. from East St. Louis to East Chicago facilities were provided for the economical operation of an important section of a major pipe-line system.

GAS CONDENSATE WELL IMPORTANT TO LISBON FIELD, LA.
By George Weber ..... Page 31

A recent well in North Louisiana has proved to be of special interest to petroleum engineers because of the methods used for recording formations and because of the significance which the well has for future operations in the field where it is located.

GRAVITY CORRECTION CHART FOR EMULSIFIED PETROLEUM ..... Page 34

A chart has been prepared which has proved to be useful for production men who desire a practical method for determining quickly the wet and dry gravity of oil containing water.

COMPLEX PHOSPHATES FOR DEFLOCCULATION OF DRILLING MUD
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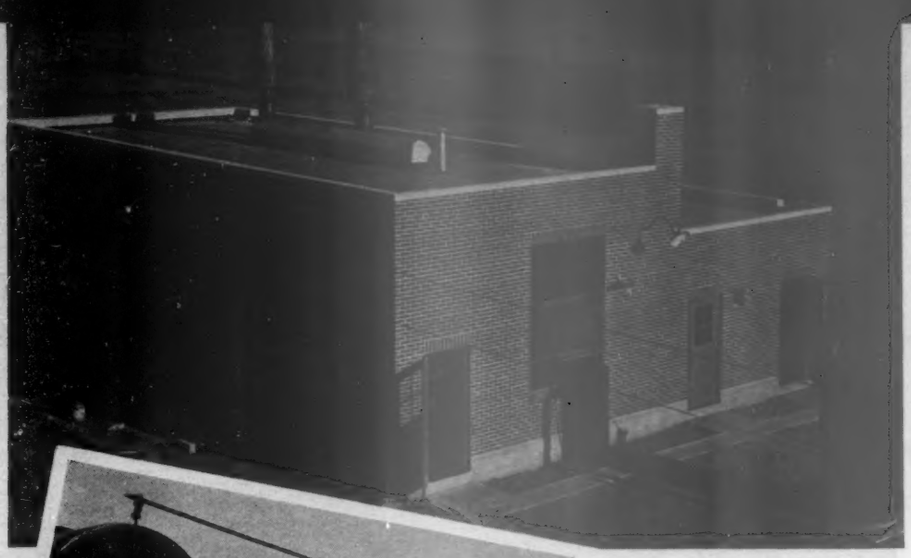
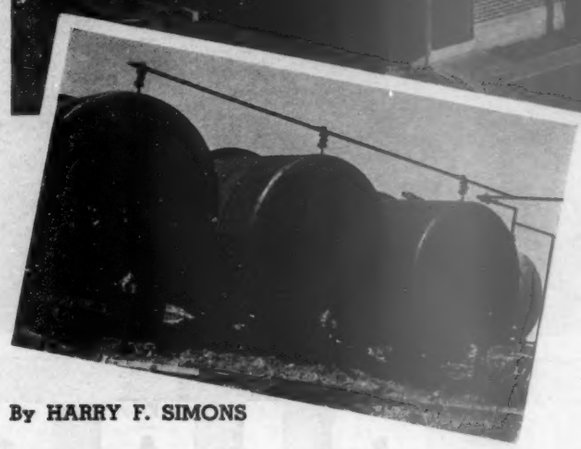
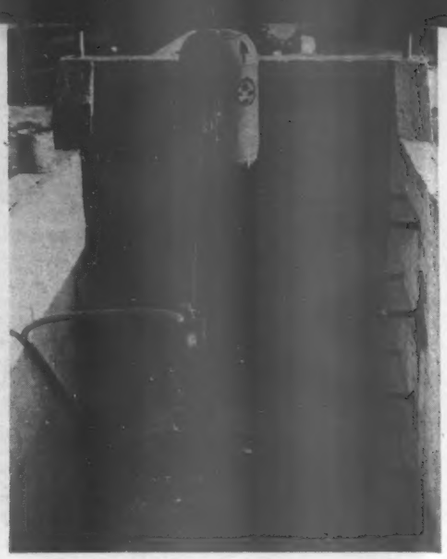






Phillips Gasoline to East Chicago

By HARRY F. SIMONS

The views above show exterior of one of the stations, concrete pit containing tank for receiving drippings from pump glands and automatically operated centrifugal pump for emptying the tank, and butane storage tanks for fuel for the engines to drive the pipe-line pumps

THE Illana Co.'s 275 miles of 8-in. line from East St. Louis, Ill., to East Chicago, Ind., has been taken over by Phillips Petroleum Co. Its facilities include a ship-loading terminal at East Chicago and two intermediate terminals in Illinois.

Due to the importance of the market area which it serves, the new line was designed as a permanent installation and will probably be a factor in finished-product distribution for many years. The line was constructed from heavy pipe, and amply protected from external corrosion. Stations and terminals were carefully planned to handle a complete range of finished products, and to be free from operating difficulties and with a view to a later increase in capacity of the line. The line, pumps, and connections were tested to 1,500 lb. per sq. in. hydrostatic pressure before it started carrying finished products. Supervision of construction had been so careful that no leaks in the welds or joints were found when the line was tested.

The line was constructed for the Phillips Petroleum Co. by the Illana Co., of Decatur, Ill. W. A. Bechtel Co., of San Francisco, was the contractor for the line with George S. Colley, general superintendent, being in charge of construction. The portion of the line south from Taylorville to Dupo was subcontracted to the Kelley-Dempsey Co., of Tulsa. H. C. Price, of Bartlesville, Okla., had the contract for the welding on the entire line. Erection of the stations and the building of the bridge across the East Side Levee and Sanitary District Canal and the Prairie-Dupont Levee, was contracted to the L. O. Stocker Co., St. Louis, Mo.

The line starts south of East St. Louis at Cahokia, Ill., where it goes due east for about 8 miles to the Dupo station. It then turns and goes northeastward through St. Clair, Madison, Macoupin, Montgomery, Christian, Macon, Dewitt, McLean, Ford, Livingston, Iroquois, Kankakee and Will counties, Illinois, and Lake County, Indiana. It passes west of the cities of Decatur and Kankakee and at a point 12 miles south of East Chicago turns and goes northward to the terminal on Lake Michigan. For a line passing through one of the richest agricultural sections in the nation, the route is unusually straight. Purchase of the right-of-way for the line without condemnation was started several months before construction was scheduled and the routing of the line was complete before the first joint was laid. The straightness of the line not only reduces the original cost but also makes for cheaper operation.

Sizes of Pipe

Pipe used on the line was 8.625 in. o.d., 24.696 lb. per ft., plain end, Republic pipe. It had a wall thickness of 0.277 in., a 30° bevel for electric welding and a minimum tensile strength of 60,000 lb. per sq. in. The pipe conformed to A.P.I. No. 5L specifications except the 0.25 maximum carbon content and the 50 per cent flattening test. The average length of the joints was 49.4 ft.

The interior of each joint was cleaned at the mill and the ends closed with JJ sealers to keep dirt, water, and all foreign matter out of the pipe before it was laid in the line. The sealers were also rigid enough to prevent distortion of the pipe ends during transportation and trouble in matching joint ends was thus minimized.

The line was electric welded by the firing-line method with the exception of about 18 miles which was by the stovepipe method. Each weld consisted of three beads around the pipe. Each welder was required to pass a satisfactory welding test before being employed on line and in addition each weld carried the welder's mark to facilitate identification when it was inspected.

Four gangs were used in construction of the line, Gang 1 starting at Taylorville and working south to the Dupo station. Gang 2 started northward from Taylorville and met Gang 4 working southward from the Kankakee River. Gang 3 started from the East Chicago terminal and worked southward to meet Gang 2, which skipped to the north side of the Kankakee River after finishing its original assignment. Most difficult portion of the line was southward from the East Chicago terminal as it passes through city and rural residential districts, and crosses numerous street highways, railroads, drainage ditches and small streams.

One of the main impediments to construction of the line was the swampy regions surrounding the many small streams in the area which were crossed by the line. A rainy spell softened the ground in many of the low places and subsequent light rains kept it in a condition to prevent the working of the men or equipment. In several places the work had to be temporarily abandoned until the ground dried.

Larger rivers crossed by the line which re-

Tanks for the storage of gasoline at one of the terminals located along the line

Left: Side-boom tractor filling ditch. Below: Painting line with corrosion-resistant material

Line from Borger Now Operating

quired special attention included the Kankakee, Sangamon, and Calumet rivers and the drainage ditch and levee near East St. Louis.

The East Side Levee and Sanitary District Canal were crossed northeast of Dupo by erecting two 90-ft. angle-iron towers with 1¼-in. steel suspension cables. The pipe line is supported by saddles on the towers at a height of about 80 ft. and by hanging lines from the suspension cables. The unusual crossing was designed to prevent any later complications due to plans for widening the canal which would require certain overhead clearances over tops of the levees.

The Kankakee River crossing was made by burying the line 2 ft. below the river bed and then holding the line in place by means of river clamps. This work was done by the Triangle Construction Co. The Calumet and Sangamon crossings were made by regular pipe-line crews. All of the river crossings are of single-line construction.

Particular attention was paid throughout construction of the line to keep the inside of the pipe clean prior to installation and additional care was taken to prevent corrosion after installation. The sealers, already mentioned, kept all foreign matter out of the pipe and a special study was made to prevent corrosion when water was introduced into the line for testing. The water used for the test was treated chemically to obtain a pH value of about 10. Specimens of the steel pipe immersed in water showed the value of this procedure as water with a pH value of 8.9, 8.2, and 8.7 shows considerable corrosion in a short time, while the water with a pH of 10 shows absolutely no corrosion after a long time.

Protection Against Corrosion

Arrangements were made to check the interior corrosion of the pipe periodically through the inspection of test coupons installed during construction. These specimens can be removed periodically and inspected to determine the amount, kind, and causes of any corrosion to date, and periodic examination can also be made to check the value of any inhibitor which may be required. All necessary connections were made during the construction of the line for the introduction of inhibitors.

A preliminary corrosion survey was made before construction of the line was started. This included a study of the experience of existing lines in the vicinity in their attempts to prevent corrosion and a visual survey over the right-of-way which included the collection of soil samples to be subjected to the nipple can, moisture content, pH, and total-acidity tests.

While construction was in progress a detailed corrosion survey was made which included measuring the resistivity of the soil at intervals not exceeding 100 ft., by the use of AC soil roads. Points such as those of low resistivity, high acidity, road crossing, mine drainage, and locations where the line was buried exceptionally deep were recommended for coating. In the East Chicago-Hammond industrial area it was found that stray current electrolysis was the major corrosion factor. Because of its thickness and its dielectric strength, a ½-in. Somastic coating was chosen for approximately 15 miles of line passing through this area. The Somastic coating was applied by the Industrial Engineering Co. of Los Angeles, Calif. Test leads were provided in the East Chicago-Hammond district so that line currents, pipe-to-soil potentials and potentials to other structures can be measured and studied without puncturing the coating. The remainder of the approximately 25 per cent of the total footage of the line which was coated, was covered with a minimum thickness of ⅛ in. of Barrett coal-tar enamel.

The line was further protected from electrolysis due to stray currents by dividing it into electrical sections by means of insulating flanges located after a study of the electrolysis conditions of all lines through the area. The line was insulated at 14 points by flanges. A line belonging to another pipe-line company passing near Litchfield has experienced electrolysis troubles which were traced to the electrical machinery used in the mines in the area. Flanges were provided for this section of the line but not completely insulated although they may be insulated at some later date when tests prove their necessity.

The four booster stations on the line are located at Dupo, Hillsboro, Maroa, and Piper City, with the final terminus being East Chicago. Distance between stations is 64.6, 65.8, 66.6, and 69.4 miles, respectively. The stations are all identical, consisting of a pump building, office and warehouse building, brick well house, four-room house for chief operator, and a garage.

Left: Towers for bridging drainage ditch and levees just north of Dupo station. The finished line will be supported by saddles on first girt from top and by the suspension cables

Right: Anchor plate for cables which will support the pipe line across the drainage ditch and levees

The main pump building is of brick and steel construction, 38 by 40 ft., and is divided into two sections by a firewall, one side housing the two centrifugal pumps and the other side containing the driving engines. Provision is made for the installation of a third pumping unit at a later date. The pumps are both four-stage, 585-g.p.m., 1,640-ft. head, 3,600-r.p.m. Goulds centrifugal pumps. In case the pump is disabled or the driving engine quits, the fluid can be bypassed and operation of the line not interrupted. The engines, which drive through individual one to four-gear increasers, are both 300-hp., 8-cylinder, 900-r.p.m. General Motors Corp. gas-butane engines, with double-dual ignition. Burgess mufflers minimize the noise of the engine exhausts. In addition to the pumps, the large engines each drive through belts a 20-kw., 125-volt, d.c. generator. The main building also houses a 20-kw., 125-volt, auxiliary generator direct connected to a 30-hp., 4-cylinder Wisconsin engine, an air compressor and drive, and a water softener.

Gasoline being carried through the line passes through a sediment trap at each station. It consists of a 20-ft. length of 16-in. pipe connected by four 8-in. nipples to a 20-ft. section of 10-in. pipe. This construction decreases the rate of flow of the fluid so any sediment will settle. Also outside the building is a Marley atmospheric spray coil water tower, 12 by 18 by 12 ft., for cooling of the engine circulating water, three cylindrical tanks, 10 by 40 ft., for butane fuel storage, a cylindrical tank, 7 by 30 ft., for butane gas storage and a sump containing a 2 ft. 6 in. by 6 ft. tank. This sump tank collects the drippings from the glands on the line pumps and is emptied by an automatically regulated pump into the main line. The butane fuel tanks will withstand a pressure of 60 lb. per sq. in. and are filled through a 2-in. line which connects to the discharge side of the station. Fuel for each plant is thus taken from the line, the communication system notifying each operator when the various fuels will be passing through his station. This is also necessary as the change in product carried in the line calls for minor adjustments in the operation of the station. Communication is by a leased telephone wire.

Unusual care was taken in the testing of the line and in the treatment of the water used in the test to prevent internal corrosion or discoloration of gasoline. The water used was from the East St. Louis city mains. Preliminary tests showed that the pH of the water had to be raised to 9.4 to prevent iron rust from forming in the line. To assist in locating any leaks that might develop as a result of the test, uranine dye was added to the solution. This gives a distinctive green color to the solution and it would have been easy to detect the leaks in the swampy areas traversed by the line. Despite the lines being subjected to a pressure of 1,500 lb. per sq. in. for a 48-hour period, there was no evidence of the slightest leak.

Adding Caustic to Test Water

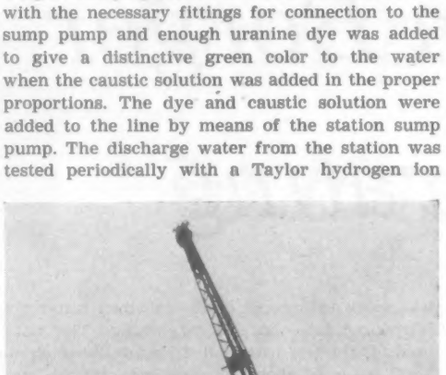
A suitable arrangement was provided at No. 1 station for adding the necessary caustic to the test water for obtaining the desired pH value. The 100 bbl. of 2 per cent solution of caustic by weight was prepared in a 210-bbl. tank provided with the necessary fittings for connection to the sump pump and enough uranine dye was added to give a distinctive green color to the water when the caustic solution was added in the proper proportions. The dye and caustic solution were added to the line by means of the station sump pump. The discharge water from the station was tested periodically with a Taylor hydrogen ion comparator for use in checking the pH value.

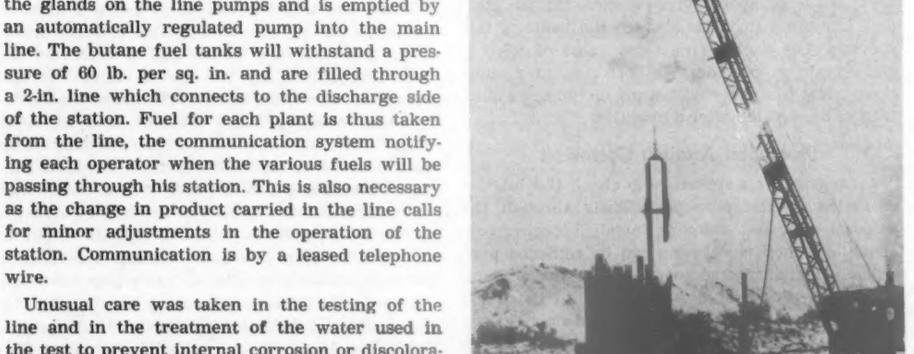
To obtain a pressure of 1,500 lb. per sq. in., the test water was pumped into the mains with the regular station pumps until a pressure of 1,200 lb. per sq. in. was reached and then a special low-volume high-pressure pump was used to increase the pressure to 1,500 lb. per sq. in. The pressure was held on the line for 48 hours and absence of a decrease in the readings on the recording pressure gages was ample evidence that the line had no leaks. This is unusual in a line of this length, considering the number of welds and the chances for a defective joint of pipe.

After testing the line an effort was made to evaluate the merit of treating the water in the manner described as a means of minimizing rusting of iron surfaces which come in contact with water. During the time the station was shut down while pressure was held on the line, the inspection plates were removed from both the intake and discharge lines of the station. The water had not been treated as it passed through the intake line and caustic had been added to the discharge water. It was found that the intake pipes were covered with a red rust, not particularly serious, but definitely rusty. The interior of the discharge line appeared clean with possibly a protective coating of calcium carbonate, although with such a small inspection plate the extent of the coating could not be verified. The condition of the two pumps was also significant; one had handled only treated water while the other had pumped only untreated water. The pump that handled the untreated water showed signs of rusting where the water had come in contact with the parts, while the pump that handled the treated water showed no evidence of rusting but did show a coating of lime.

Each intermediate terminal includes an office and warehouse, a building for the blending of Ethyl with the gasoline, laboratory boiler house, a combination firecart, sample and dye building, railroad loading rack and truck loading rack. Tankage includes four 15,000-bbl. floating-roof tanks, and two 5,000-bbl. floating-roof tanks with an additional 5,000-bbl. floating-roof tank at the Decatur terminal. By using blending valves it is possible to load finished motor fuel direct without the use of receiving tanks. Wiggins pontoon tanks are used to prevent evaporation losses.

At East Chicago there is a complete terminal including a ship loading dock in addition to the railroad and truck loading racks. Storage includes six 80,000-bbl. tanks, four 20,000-bbl. tanks, four 10,000-bbl. floating-roof tanks, thirty-six 1,000-bbl. butane blimps, and two 20,000-bbl. spheroid tanks.





Right: Driving piling for ship-loading terminal at East Chicago, Ind. Below: Bottom rings of 80,000-bbl. tanks which were erected at East Chicago terminal

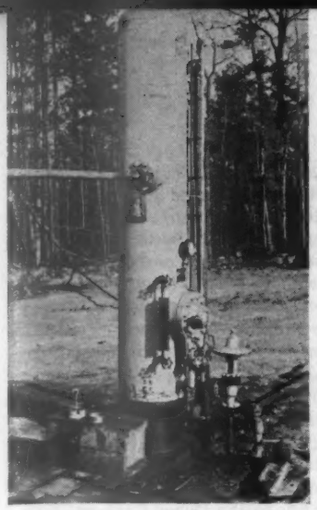
BOOKS

OFFICIAL DIRECTORY OF MICHIGAN OIL AND GAS INDUSTRY. 88 pp. For sale by The Oil and Gas Journal Book Department, Tulsa. $5.

This is a directory of individuals and business firms in the Michigan oil fields. A classified section is included which is arranged according to branches of the industry. The directory is up to the minute and should be of vital interest to anyone having need of information about oil and gas activities in the Wolverine State.

WEST VIRGINIA GEOLOGICAL SURVEY: GREENBRIER COUNTY. By Paul H. Price and E. T. Peck. 846 pp. Morgantown: West Virginia Geological Survey Commission.

This is a detailed geological report of West Virginia's second largest county, which contains 1,022 sq. miles of territory. It is accompanied by large topographic and geologic maps, the survey and the maps being prepared by the state geologist and his assistant.



Gas Condensate Well Important to Lisbon

By GEORGE WEBER

High-pressure separator installed to determine condensate recovery. However, the well is shut in without having cleaned itself thoroughly and more accurate tests will be carried out on a mobile-testing unit

DISCOVERY of deep high-pressure gas-condensate production in the Lisbon field of North Louisiana is of considerable engineering interest. The discovery well, Lisbon Exploration Co.'s No. 1 Vaughn, has attracted attention because of the thoroughness of its drilling record through employment of advanced engineering practices.

The finding of gas-condensate reserves adds further importance to the possibilities for future development. Several prospects present themselves in exploitation of this new discovery. Of primary importance to operators in the field is the use of the gas for repressuring the Pettit-lime zone at Lisbon. Conservative development of the deep reserves is also being given careful consideration. The current cooperative attitude of all operators and interests concerned with this prospect indicates that maximum utilization of the newly discovered gas will be made.

The conservative attitude regarding this project arises largely from lessons learned in the erratic development of the Pettit zone at Lisbon. Overdrilling and subsequent pipe-line proration and price reductions wrought hardships on Lisbon operators generally. At the present time, of a total of 228 wells on production, only about 65 are flowing wells. The reservoir pressure when last determined several months ago averaged 642 lb. per sq. in. and estimates of its present level are much lower.

Although the average porosity of the lime in the field is 19.5 per cent and saturation is high, a low permeability, averaging 50 millidarcys, has made pumping problems difficult. The availability of high-pressure gas in the field, therefore, offers an excellent opportunity for recovering added reserves under conditions well suited to repressuring.

In planning the use of the gas for repressuring the Pettit zone the need for conservative methods of producing the deep horizon are not being overlooked. A thorough test of well-flowing characteristics, condensate yield and optimum pressure and temperature conditions for condensate recovery will be undertaken shortly. A wide-spacing pattern for development of the deep gas zone is also indicated.

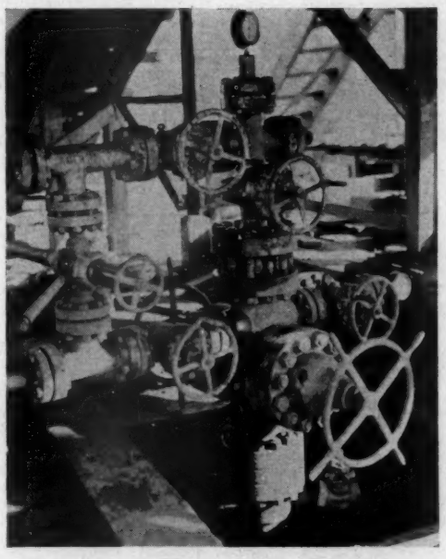
Discovery Well

The possibility of lower Marine or Travis Peak production at Lisbon has long been a conjecture, supported by the discovery of deep production at Cotton Valley and at Sugar Creek, whose structure adjoins that of Lisbon. In the summer of 1939, independent operators, major oil companies and individuals interested in the Lisbon field subscribed to the support of a deep test to be drilled in the field. The agency chosen to drill the test was the Lisbon Exploration Co., whose officers and stockholders numbered all the interested parties.

As an exploratory test, the well has provided much geological and drilling data which will be of considerable value in further development of the new producing zone. As a discovery well it has shown results which, while not as important as believed at one time, are still sufficient to warrant proceeding with the projects mentioned.

Careful drilling was necessary due to the slim hole carried. The well is a deepening job of a former Pettit producer. The 5,295-ft. of 7-in. producing string in the original well was first recemented to preclude difficulties in further drilling. Rotary speeds, choice of bits and fluid volumes were controlled carefully to give a hole which never varied 1° off vertical. With ⅞-in. clearance through the 7-in. casing and total depth at 8,900 ft., the test is believed to have required the deepest cementing job with the smallest clearance of any test to date.

Time-logging was recorded continuously during drilling and coring. Also into a running record went rotary speed and fluid volume. These data, charted after completion of the well, show a detailed record of bit performance. Fig. 1 represents this information graphically. From its study, engineers have been able to make important decisions on what methods and drilling conditions to employ in further deep drilling at Lisbon.

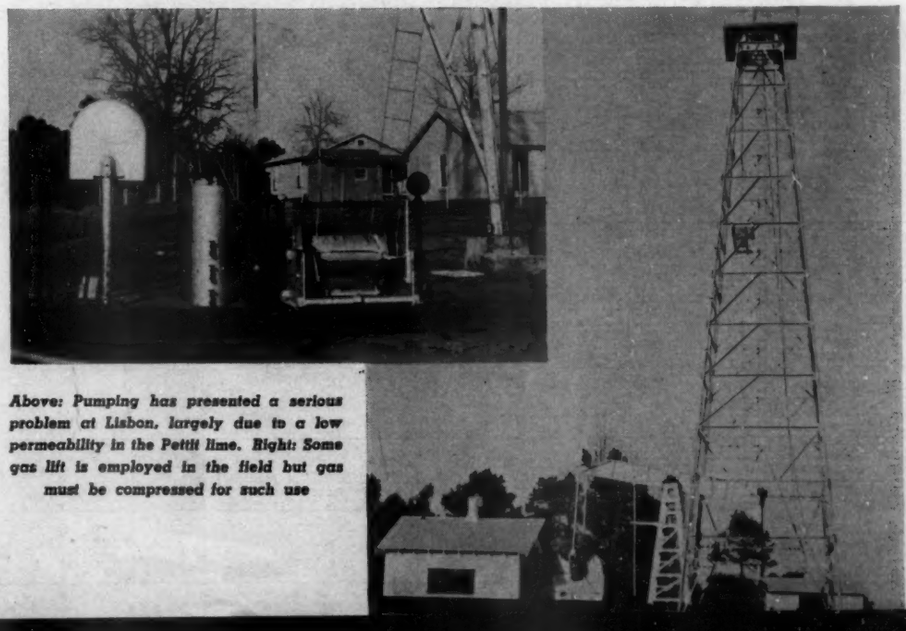


Heavy well-head connections are necessary for the 8,450-ft. gas-condensate well

May Increase Penetration 100 Per Cent

Separate records plotted for the performance of the Hughes O.W.S. and H.R.S. type bits and for the core heads allow direct correlation between section drilled, rotary speed, fluid volume and bit penetration. As shown by the increased bit penetration and smaller average penetration in minutes per foot at the greater fluid displacement figures and higher rotary speeds, it is believed that in future drilling, the penetration may be increased 100 per cent by doubling the fluid displacement and holding the rotary speed to at least 100 r.p.m.

The choice of bits will also be influenced by the record of the No. 1 Vaughn. The two types of bit used are considered to have given very good service when used in the formations for which they were designed. The O.W.S. bit, which is self-cleaning, was used in shale sections, while the harder sand sections which characterize the lower Marine formation were drilled with H.R.S. type. In one instance O.W.S. bits were used in



Above: Pumping has presented a serious problem at Lisbon, largely due to a low permeability in the Pettit lime. Right: Some gas lift is employed in the field but gas must be compressed for such use

hard sand due to a lack of the other type, explaining their decreased performance in comparison with penetration in sections to which they were better adapted.

One particularly hard section was encountered at 7,744-60 ft. At that level, streaks of quartzite in the basal Travis Peak formation gave trouble. One section required four bits in 5 ft. of section and penetration ran to 220 minutes per foot, and as much as 180 minutes for one-tenth of a foot. Again, as is often the case in drilling wildcats, the bit used was not the best adapted to the formation. From this record, drilling in the future through this section will be carried out with the hardest bit available. Thus in addition to the saving in bits, drilling time will be appreciably cut, since a round trip from that section consumed 4½ to 5 hours.

It should be pointed out that due to the necessity for using the small 6.25-in. bits in the slim hole, bearing wear was greater than might be expected. This condition will be corrected in future drilling if full-sized holes are carried.

The savings in future drilling, employing double the mud-pump capacity, higher rotary speeds and better bit selection will run an estimated $5,000 per well. This saving will apply if the sections penetrated in future wells are generally the same as those drilled in the No. 1 Vaughn. Sand sections may thicken to the southwest, since the Lisbon well penetrated only about 20 per cent as much sand in the deeper formations as the Union Producing Co. and Standard Oil Co.'s No. 2 Brownfield, a deep test at Sugar Creek, 9 miles to the southwest. The sands of the lower Marine formation are characteristically hard, as compared with shales, and any appreciable increase in sand will affect the cost of drilling. This condition provides a ready correlation of sections through time drilling.

Gas-Input Needs

Experimental work is now under way for determining gas-input requirements of the Pettit zone at Lisbon. Three wells, two located high on the structure and the third down structure, will be used for the tests. Under a temporary 90-day order issued by the state Department of Conservation, these wells will be equipped with heavy bottom-hole packers, gas meters and other auxiliary equipment to determine their reaction and the results on Pettit production from repressuring by the Vaughn gas.

Production tests on the Lisbon Exploration Co.'s deep producer have been completed by engineers of Black, Sivalls & Bryson, Inc., and separator equipment which will provide the best optimum yield of condensate from the high-pressure gas well is being installed. Gas for the experimental work is being furnished free by the Lisbon Exploration Co. During the input period, regular bottom-hole pressure tests in the three input and surrounding wells will be made to determine the effect of the increased pressure.

Equal care was taken in keeping an accurate and detailed geological record of the well. Three devices aided in this work. A continuous sampler

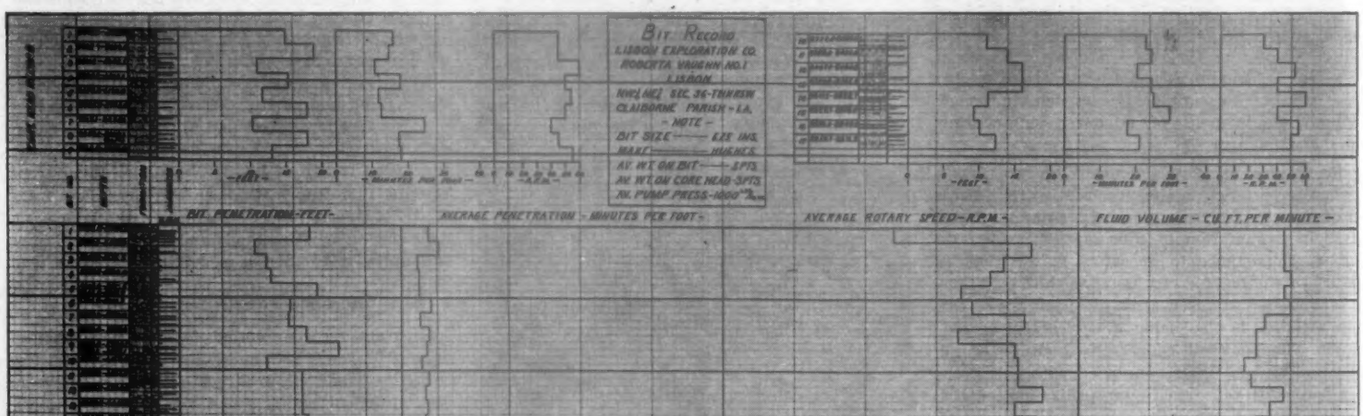

BIT RECORD
LISBON EXPLORATION CO.
ROBERTA VAUGHN NO. 1
LISBON
NW¼ NE¼ SEC. 36-T16R3W
CLAIBORNE PARISH - LA.
- NOTE -
BIT SIZE —— EZE INS.
MAKE —— HUGHES
AV. WT ON BIT —— 5PTS.
AV. WT ON CORE HEAD-5PTS.
AV. PUMP PRESS-1000 "
BIT PENETRATION-FEET-
AVERAGE PENETRATION - MINUTES PER FOOT -
AVERAGE ROTARY SPEED-R.P.M.-
FLUID VOLUME - CU. FT. PER MINUTE -

Fig. 1—Bit record on Lisbon Exploration's No. 1 Roberta Vaughn, Claiborne Parish, Louisiana

which took cuttings from the mud stream, washed them and delivered them to a sample box provided a representative record. Unwashed samples of cuttings were also taken from the mud stream and examined in a fluoroscope for traces of oil.

One of the most useful devices in checking gas shows in the deep formations was a Mid-Continent gas detector. The instrument detects minute fractions of gas in the mud and by a horn signal enables closer examination of the sections by coring. It also acts as a warning of gas cutting. The gas detector operated to the complete satisfaction of operators, adding valuable data to the logs kept on the formations drilled. A preselector allowed a determination of relative volumes of gas in the mud. This setting was varied when penetrating a gas zone, and the point at which the horn signal was shut off gave a correlation of the relative gas fraction in the mud. A sample record of the detector while an 8,800-ft. section was being drilled is shown in Table 1.

TABLE 1—SAMPLE GAS-DETECTOR RECORD

Time	Depth	Points on preselector to shut off below
7:40 a.m.	8,818.2	43-40
7:44 a.m.	8,818.4	40-33
7:48 a.m.	8,818.7	33-28
7:55 a.m.	8,819.0	28-22
8:03 a.m.	8,819.6	22-19
8:17 a.m.	8,820.0	24-21
8:30 a.m.	8,820.4	cleaned out lines
8:41 a.m.	8,822.0	39-36
8:43 a.m.	8,822.1	36-30
8:45 a.m.	8,822.2	30-24
8:46 a.m.	8,822.3	24-17
8:50 a.m.	8,822.6	17.0*
8:51 a.m.	8,822.7	20-17
8:54 a.m.	8,822.8	36-33
9:05 a.m.	8,823.4	33-25
9:21 a.m.	8,824.0	25.0

*Reduced vacuum on suction line.

In using steam for the vacuum on the combustion chamber of the device, lines must be cleaned out periodically, interrupting the correlation. Variable condensation at different temperatures also tends to change the vacuum reading on the combustion chamber, reducing the accuracy of correlations. An improved model of the device is designed to maintain a constant vacuum by means of an electrically driven mercury pump.

Deep Sands

Three deep sands in the lower Marine formation showed for possible production in the Lisbon test. Three zones were cored and correlated with the Schlumberger at 8,347-75 ft., 8,449-55 ft. and 8,817-48 ft. Fig. 2 shows the Schlumberger record for the two upper sands. The gas detector did not indicate the presence of gas in the upper sand, but a good show was made in the other two horizons, especially the deepest sand which went beyond the range of the preselector.

With bottom of the hole at 8,900 ft., an 8,880.7-ft. string of 5-in. o.d. casing was cemented 200 ft. into the 7-in. casing, using a 15.8-lb. slurry of Trinity Inferno cement. A good cement job was obtained, as later perforations at various levels proved.

Electrical logging and pipe measurements checked closely. This is largely due to the care taken in measuring the pipe in the hole. To aid in rapid, accurate measurement, a device holding the tape snugly against the box at the top of the string allowed exact measurement on the derrick floor while the string was slung in the hole, correcting for the elastic stretch on the string.

The upper sand which showed good possibilities was first perforated at 8,354-83 ft. with 116 shots. The gun was then lost in the hole and forced to bottom. The section perforated showed salt water on a test and was squeezed off.

Operators then went to bottom and shot the lowest horizon at 8,809.5-22.5, 8,825.5-53.5 and 8,845.5-58.5 ft. totaling 156 shots. A drill-stem test failed to show anything and subsequent swabbing resulted in a slight gas show and stain of oil. Failure of the sand to produce is believed due to three conditions, low permeability, infiltration of mud and cementation of sand when the casing was set.

Shoot Vaughn Sand

Following the two failures, the middle or Vaughn sand was then shot at 8,444-64 ft. with 96 perforations and the well washed in making 15,500,000 cu. ft. of gas together with condensate and wash water, through a ½-in. choke at tubing pressure of 1,325 lb. and casing pressure of 2,175 lb. Hydrate formation in surface lines and separator prevented accurate production gages until a $\frac{5}{16}$-in. bottom-hole choke was set at 5,000 ft. The initial gage of the well was given as 64 bbl. of condensate and an estimated 3,000,000 cu. ft. of gas through a ⅜-in. surface choke. Several flow tests were made using the high-pressure separator. A yield of 3.5 gal. per M.c.f. was obtained at a separator pressure of 7-800 lb. Condensate averages 54 gravity. Its analysis is shown in Table 2.

TABLE 2—CONDENSATE ANALYSIS

Crude

Gravity, degrees A..I.	54.5
Flash	BRT
Fire	BRT
Viscosity at 50° F.	36
Viscosity at 100° F.	35
Pour point	0
Basic sediment and water	trace
Sulfur, per cent	.02
Color	yellow

Products

	Gasoline	Kerosene	Gas oil
Per cent yield	59.0	19.0	20.0
Vapor temperature	350	500	...
Gravity	59.9	46.9	39.7
Flash	...	130 Tag. c.c.	280
Fire	...	...	300
Viscosity	...	...	46 at 100 °F.
P.T.	...	...	60
Color	30	25	3½ N.P.A.

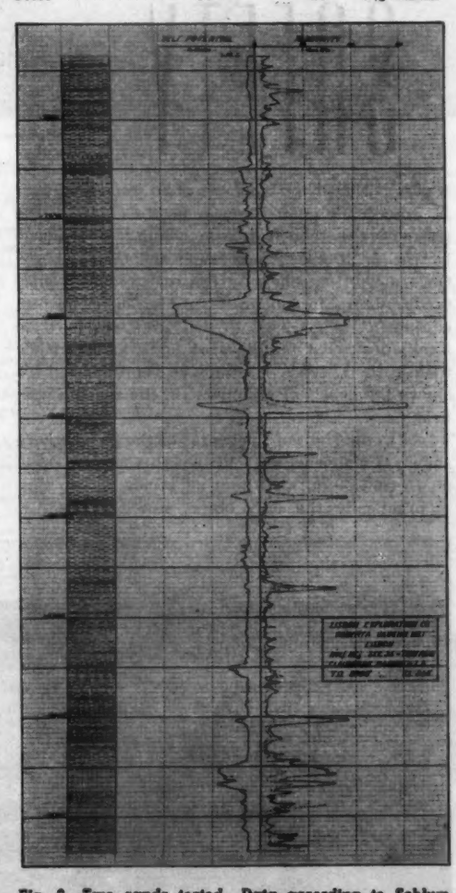


Fig. 2—Two sands tested. Data according to Schlumberger log

A.S.T.M. Distillation on Gasoline Cut

Gravity	59.9
I.B.P.	118
10 per cent	170
20	190
30	207
40	221
50	234
60	245
70	264
80	284
90	309
95	339
End point	380
Rec.	97.5
Dr.	negative
Octane number	55.5
2.1 c.c. lead to 74 O.N.	

Estimated Topping and Cracking Yields

	Per cent
Straightrun gasoline	59.0
Kerosene	19.0
Cracked gasoline	14.0
Fuel oil (11 gravity)	4.0
Gas and loss	4.0

Due to pressure of mud on the sand before completion, it is not entirely cleaned yet. Before tests conducted by Black, Sivalls & Bryson engineers it will be blown and cleaned thoroughly. Tubing, ran with bottom of a 6½-ft. perforated nipple at 8,491 ft. will be raised 30 ft. before these production tests are begun.

Despite failure to find commercial production in the upper and lower sands, operators do not entirely discount their possibilities elsewhere in the field. It is believed that the upper sand which showed good porosity and permeability, may carry oil or gas up structure from the well. Also it is believed that the lower sand which was badly caked might produce where it is sufficiently cleaned and acidized.

Field Plans

Much work is ahead for Lisbon engineers in evolving a plan for developing the Vaughn sand and repressuring the Pettit zone. A thorough survey of the Pettit horizon must be made. This study must take into consideration the estimated volumes of original oil in place, oil produced and remaining oil in place by lease. A fluid-level survey is also necessary. With this information, coupled with a structural picture of the field, the plan for repressuring may be agreed upon.

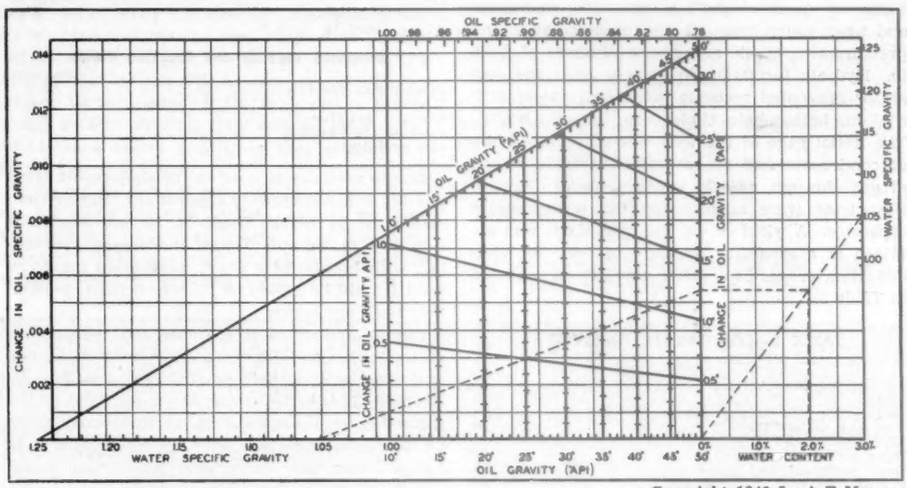
Attention will also be given the development and production of gas from the Vaughn sand. Wide spacing, at least on a 160-acre pattern, has been given general consent. Results of the well testing will govern plans for producing the deep horizon. Partial recycling may be undertaken if it is found that condensate loss in the reservoir due to declining pressure overbalances the added recovery of Pettit production through repressuring. Optimum operating pressures of the condensate-recovery plant must be determined from results of the well tests, the study of input pressure requirements to the Pettit and possible compression for recycling gas to the Vaughn sand.

Cooperation Assured

The attitude of operators and royalty owners alike toward a cooperative effort is very encouraging. The general participation in drilling the deep well has resulted in a common interest in the outcome of the project. The possibility of finding high-pressure gas has been widely discussed and even before the well was brought it, the probable plans for its use were generally agreed upon.

Complete unitization and pooling of the two horizons are not believed necessary. However, opinion favors the establishment of a common agency to direct development of the Vaughn sand and to conduct repressuring operations in the Pettit zone. Equitable benefits from condensate production will be assured by unitizing the acreage in the unit chosen. The choice of input wells to the Pettit, and the allocation of production to give greater ultimate recovery will depend on the findings of engineers, and it is expected that agreement to their decisions will be obtained.

Gravity Correction Chart for Emulsified Petroleum



Copyright, 1940, Louis T. Monson

Simplified chart for determining effect of removing water from oil

BY means of a chart developed by Louis T. Monson, an engineer with the Tretolite Co. of California, it is practicable to ascertain quickly the wet or dry gravity of an oil containing water, if either gravity is known, and if the water gravity and water content (not emulsion content) are known before and after it is freed of water in the emulsified form. The simplified chart is included here and, in explaining its use, an example follows:

To determine the wet gravity of an oil if the dry gravity is known: Draw a line from the 0.0 per cent mark in the "water content" scale in the lower right-hand margin to the point in the right-hand margin representing the desired "water specific gravity." Find the intersection of this line with the desired vertical water-content line. Project this point leftward to the 50° "oil gravity (A.P.I.)" line. Connect this last intersection with the proper mark in the "water specific gravity" scale in the lower left-hand margin. The intersection of this line with the proper vertical oil-gravity line gives the correction to be applied, in A.P.I. degrees. The correction may be read in specific-gravity units in the left-hand margin of the chart.

Example: How much will 2.0 per cent of water of specific gravity 1.05 alter the specific gravity of an oil of 40° A.P.I. dry gravity? The dotted lines on the chart show the correction to be 0.93° A.P.I. This must be deducted from the dry gravity. The gravity of the wet oil is therefore 39.07° A.P.I. (The change in specific gravity is 0.0045. This must be added to the specific gravity of the dry oil. The wet oil will therefore have a specific gravity of 0.8296.)

To determine the dry gravity of an oil if the wet gravity is known: Proceed exactly as above, except use the valve for wet gravity where the dry gravity was used there. Instead of deducting the observed A.P.I. degree correction, add it. (Instead of adding the observed specific-gravity correction, deduct it.) For the smaller corrections, this first approximation is sufficiently accurate. It is not exact, however. (The maximum error introduced by its use is for 50° A.P.I. oil and 3.0 per cent of a water of specific gravity 1.25. In this case, the error is minus 0.224° A.P.I. or plus 0.000436 specific-gravity units.)

To secure an exact value, the following procedure is employed: Use the newly found gravity value as the dry gravity of the oil, and repeat the operation of determining the correction, obtaining thereby a second approximation. This last value, if in A.P.I. degrees, is added to the original wet gravity value to obtain the dry gravity. (If specific gravity units are used, the last found correction is deducted from the original wet specific gravity to obtain the dry specific gravity.) Further approximations are rarely required, and are not recommended to be used.

Example: What is the true (dry) gravity of an oil which is 40° A.P.I. when it contains 2.0 per cent of water of specific gravity 1.05? The first approximation of the correction, as found in the above example, is 0.93° A.P.I. Add this to the wet gravity to obtain an approximate dry gravity of 40.93° A.P.I. (In specific-gravity units, the correction, 0.0045, must be deducted from the original wet gravity, giving an approximate dry specific gravity of 0.8206.)

To secure a more accurate value, redetermine the correction using 40.93°, the first approximation of the dry gravity just found, instead of the value, 40°, there used. The second approximation of the correction is so found to be 0.96° A.P.I. Add this to the original wet gravity (not to the first approximation of the dry gravity) to obtain a second approximation of the dry gravity, 40.96° A.P.I. (In specific-gravity units, the second approximation of the correction is found to be 0.0046. Deducting this from the original wet specific gravity gives a second approximation for the dry gravity, 0.8205.)

Full-size copies of the chart illustrated, with instructions for its use, may be secured without obligation by addressing the Tretolite Co. of California, 5515 Telegraph Road, Los Angeles, Calif. Reprints of the present article are procurable from the same source.

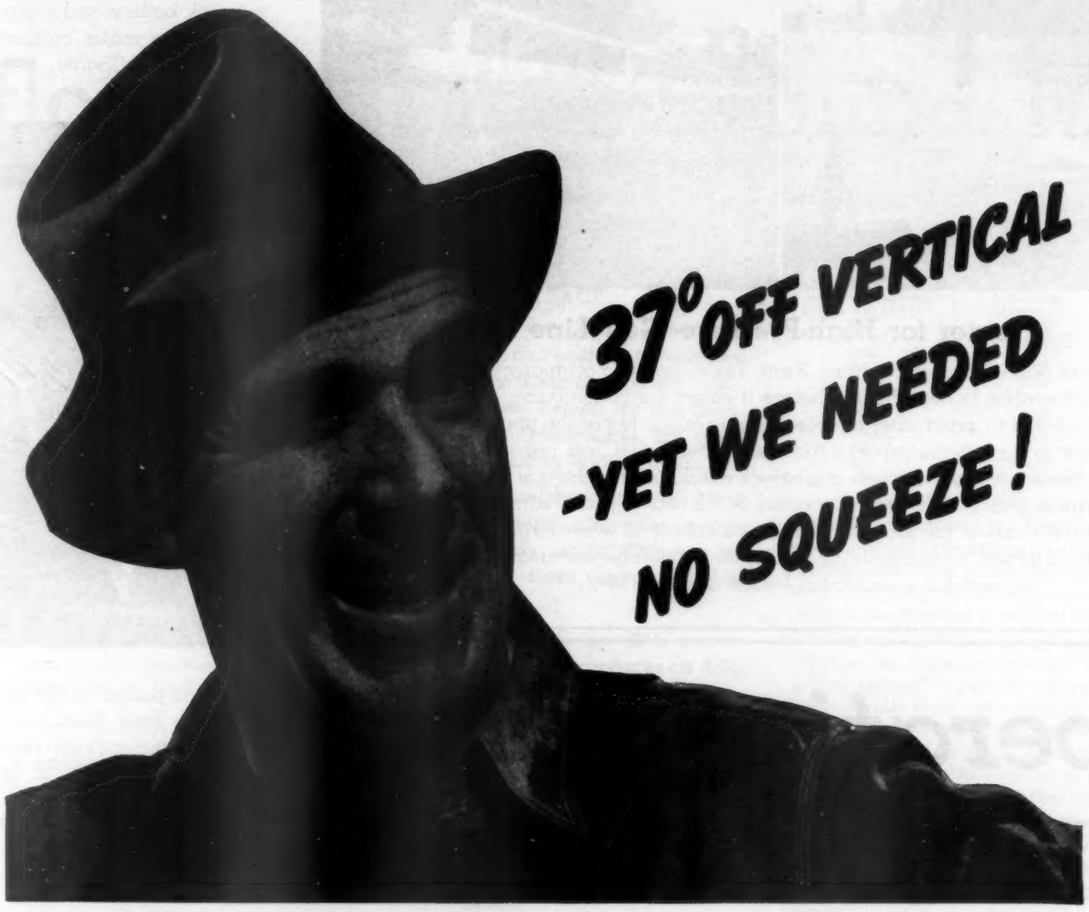
SAFETY

Methods Used to Prevent Blowouts

PREVENTION of blowouts is an important part of a drilling crew's work and the choice of the preventive method is a responsibility to be borne by the drilling contractor and the oil company. Once a well gets beyond control it may require many months to subdue it. In case of a blowout, equipment being used to drill the test may be totally destroyed and the workmen stand a chance to lose their lives. The picture reproduced here shows the debris of a blowout in the Driston pool near Corpus Christi, Tex.

Just to the right of the center of the picture here shown is a sign which told that this rig had operated over 150 days without an accident. The sign is practically the only object not destroyed. It emphasizes the importance of the slogan coined by one major company and widely used in safety work: "Eternal vigilance is the price of safety." Accident records built up over a period of months go for naught through an oversight or failure to perform some routine safety measure.

Two methods are used to prevent and control blowouts. These are mud maintenance and installation of safety devices on the casing to provide for closing the well when the drill pipe is either in or out of the hole. The mud must have sufficient weight per gallon to hold the gas in the formation, must have a low viscosity so none of the gas will be entrained and thus lighten the column, and must have other characteristics.



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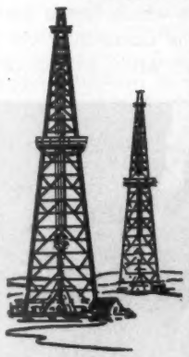
12 Good Reasons for Using Unaflo...

The Oil-Well Cement with a Retarded Set



1. Gives you more time to get it down.
2. Mixes and places easily with 35% water, thus eliminating need for excess water — a big menace to good cementing.
3. Follows irregularities of well bore and casing.
4. Easier to regulate viscosity at tub.
5. Hardens thoroughly with high density after placing.
6. Not stiffened by mud contamination.
7. Not affected by salt water contamination.
8. Sets satisfactorily in sulphate water.
9. Meets the requirements for sulphate resistance.
10. Makes squeeze and plug-back jobs easier, surer, more successful.
11. Permits operator to control cement rather than being controlled by it.
12. Has been proved by oil industry by consistently "coming through in the clinches" ever since its introduction.

"WE were cementing an 8,700-ft. well on the Gulf Coast with Unaflo Oil Well Cement. Down-the-well temperature was 206° F. The lower part of the bore was 37° off vertical. Our boss sure was scowling over that. He said it was forcing us to follow up this job with a squeeze.

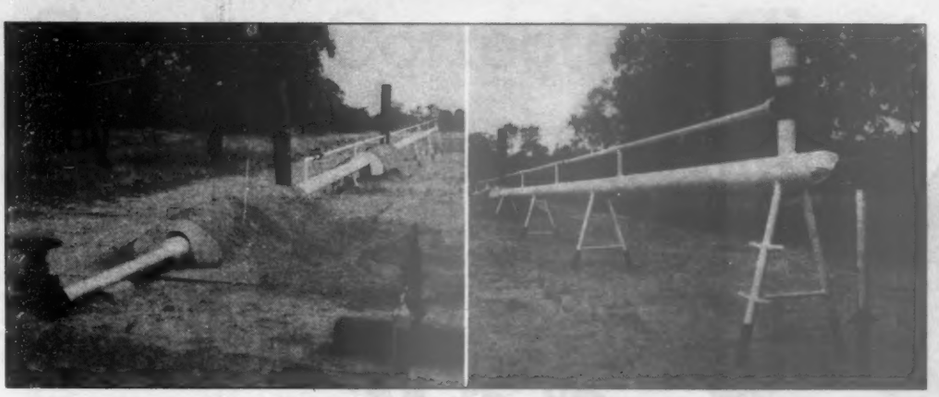
"Well, sir, you should have seen his jaw drop when that cementing job was done . . . No squeeze was needed at all! That Unaflo cement made a fluid-tight seal—all in one operation!"

"Here's how we figured it. A 10-lb.-per-gallon mud in this well caused a natural bottom-hole head of 4,000-lb. per sq. in. And this pressure on the fluid slurry turned in a natural squeeze job for us!"

Play safe with well investments. And save money! Use Unaflo, the easy-flowing, hard-setting cement with the retarded set *that provides a natural squeeze*. Write for "Oil Well Cementing Guide," a new book on using Unaflo under Mid-Continent conditions. If you are in the Mid-Continent field, write today on your business letterhead. Address nearest office of Universal Atlas Cement Co. (United States Steel Corporation Subsidiary), Amicable Building, Waco; Tulsa; Oklahoma City; Kansas City.

OG-H-6

Universal Atlas CEMENTS



Heater for High-Pressure Gas Line

At a high-pressure gas well near Graham, North Texas, one gas company is using the heater shown in the photographs to heat the gas before it enters the transmission line to prevent the valve from freezing and to avoid other troubles. Gas is expanded at the upper end of the heater, the water jacket is close to the valve so that the heated water will prevent it from freezing. Gas for the two heaters is taken through a pressure regulator after the gas has passed through a valve on the lower end. A 2-in. line, connected to the water jacket at six points, serves to equalize pressure throughout the jacket and assure a supply of water throughout the length of the jacket. Water is added occasionally to the heater through the swaged nipple at the upper end, but evaporation losses are very slight.

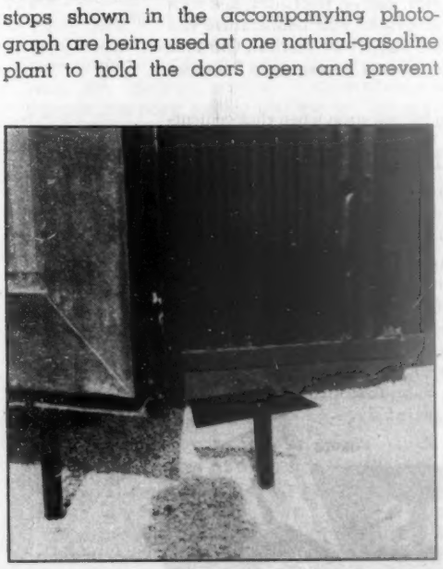
Operating Ideas

Guards on Gate-Valve Wheels

To protect the wheels on gas valves at a central tank battery and separator, which is not fenced, one major company in the Harper field of Ector County, West Texas, has installed the protectors shown here. The guards are made from ¾-in. rods, driven into the ground sufficiently to resist a truck being driven over the wheels. These guards also prevent cattle from interfering with the valves adjustment, which is important.

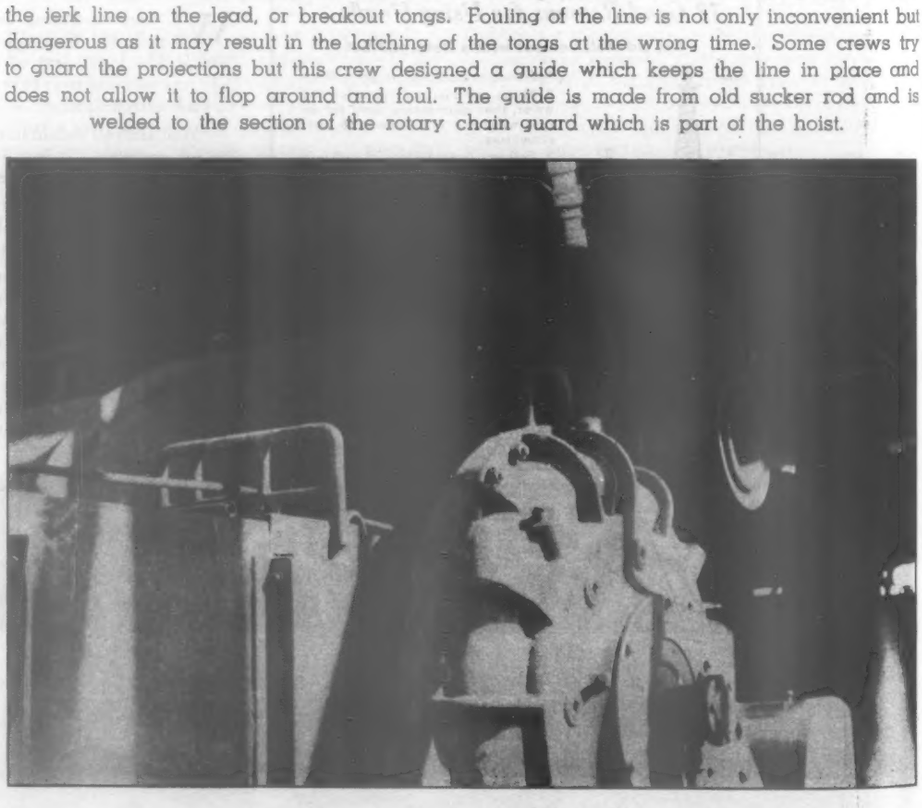
Economical Door Stops

In the K.M.A. field of North Texas the door stops shown in the accompanying photograph are being used at one natural-gasoline plant to hold the doors open and prevent them from swinging. One catch is shown holding a door open and the other is in position to receive a door. The catches are cut from light-weight tank steel, balanced so they will automatically hold a door when it is swung open. Automatic catchers save time and equipment in cold weather.



Guide for Jerk Line

Even with streamlined guards there are still enough projections on a drilling-rig hoist to foul the jerk line on the lead, or breakout tongs. Fouling of the line is not only inconvenient but dangerous as it may result in the latching of the tongs at the wrong time. Some crews try to guard the projections but this crew designed a guide which keeps the line in place and does not allow it to flop around and foul. The guide is made from old sucker rod and is welded to the section of the rotary chain guard which is part of the hoist.



Complex Phosphates for Deflocculation of Drilling Mud

By C. F. BONNET
American Cyanamid & Chemical Corp.

ABSTRACT

Examination of the known chemical data on commercial sodium phosphates shows that only those classed as "complex" phosphates, formed by the dehydration of normal phosphates, are effective for deflocculating drilling muds.

While the complex phosphates all have deflocculating effects, clay suspensions treated separately with different reagents of this class show varying characteristics.

Particularly striking is the difference in cumulative complex phosphates on drilling fluid.

INCREASING recognition of the importance of chemical treatment of drilling muds has revealed a scarcity of published information upon the subject. Most of the data which have been published have dealt largely with the colloidal clays used in drilling fluid. Until recently the change in physical properties of these clays due to changes in chemical conditions has not received the attention it deserves. The complex phosphates formed by dehydrating normal phosphates have gained recognition as a very important class of chemicals for the treatment of drilling mud and the purpose of this article is to review the properties of the phosphates that are useful for this purpose.

Complex phosphates have long been known but until recently have had little commercial use. Phosphoric acid has the unusual property of combining in a series of definite complex forms depending upon the amount of water removed by processing the normal acid. The chemical compositions of commercial sodium phosphates are illustrated in the following table:

COMMON SODIUM PHOSPHATES (Considered in their anhydrous forms)

Name—	Formula:		Concentration	pH
Trisodium phosphate	Na_3HPO_4 or $2Na_2O.$	$1P_2O_5$	5%	11.5
Disodium phosphate	Na_2HPO_4 or $2Na_2O.$	$1P_2O_5.1H_2O$	5	8.0
Monosodium phosphate	NaH_2PO_4 or $2Na_2O.$	$1P_2O_5.2H_2O$	5	4.6
Tetrasodium pyrophosphate	$Na_4P_2O_7$ or $1NA_2O.$	$1P_2O_5$	5	8.9
Sodium metaphosphate	$Na_4P_4O_{12}$ or $3Na_2O.$	$1P_2O_5$	1	5.3
Sodium tetraphosphate	Na_5PO_4 or $3Na_2O.$	$2P_2O_5$	5	7.8

By separating the chemical formulas as shown above into combinations of sodium oxide (Na_2O), phosphorous pentoxide (P_2O_5) and water (H_2O) it can be seen that tetrasodium pyrophosphate is equivalent to two molecules of disodium phosphate with one molecule of water removed. Sodium metaphosphate is likewise equivalent to monosodium phosphates with two molecules of water removed. Sodium tetraphosphate is equivalent to one molecule of disodium phosphate and one molecule of monosodium phosphate with three molecules of water removed. The most interesting thing about this combination is that although it is apparently made up of two other phosphates, it is a stable compound itself and not a mixture. This is evident from the fact that there are certain distinctions in the chemical properties of sodium tetraphosphate as compared to other phosphates. It is also an interesting fact that complex pyro, meta and tetraphosphates when dissolved in water do not readily take back into their molecular structure the water that was removed when they were manufactured. This water will be taken back in the course of time and the time period will depend upon the temperature, being shorter at high temperatures. From experimental results, it appears that the absorption of water into the molecule to form normal phosphates is more rapid in the case of molecules having low pH. Sodium tetraphosphate and tetrasodium pyrophosphate are comparatively stable in this respect.

The effect of normal phosphates on drilling muds is about the same as the effect of other common alkalies. The so-called "complex" phosphates, or those from which water has been removed by heat have an exceedingly sharp deflocculating effect.

The comparative effect of disodium phosphate (a normal phosphate) and tetrasodium pyrophosphate (the equivalent complex phosphate) on the viscosity of a drilling mud is shown in Table 1 and in Fig. 1.

TABLE 1—EFFECT OF PHOSPHATE ON VISCOSITY

Amount phosphate added—lb./bbl.	Funnel viscosity 500/500 seconds: Disodium phosphate	Tetrasodium phosphate
0.0	46.2	52.2
0.033	46.6	...
0.06	...	31.4
0.67	47.8	...
0.133	48.0	...
0.15	...	24.2
0.20	52.2	...
0.366	56.8	...
0.534	58.2	...
0.58	...	21.6
0.7	60.6	...

These tests show that small quantities of the "complex" phosphates, illustrated in this case by a pyrophosphate, sharply reduce the viscosity of drilling mud while similar amounts of the equivalent orthophosphate, disodium phosphate, actually increase the viscosity of drilling mud.

The group of "complex" phosphates which are effective for reducing viscosity includes sodium tetraphosphate as well as tetrasodium pyrophosphate. While all of these complex phosphates will deflocculate drilling mud and reduce viscosity, each product has its own peculiar characteristics which form the basis for the selection of one or the other for treating mud in a given field or well.

One important factor is the effect of heat on these "complex" phosphates and on clays treated with them. This matter is under investigation at the present time and will be discussed in a future paper.

Another important consideration in the treatment of drilling mud is that the mud circulates in a closed system and little if any mud is discarded. Consequently, chemicals added accumulate during

(Continued on Page 42)

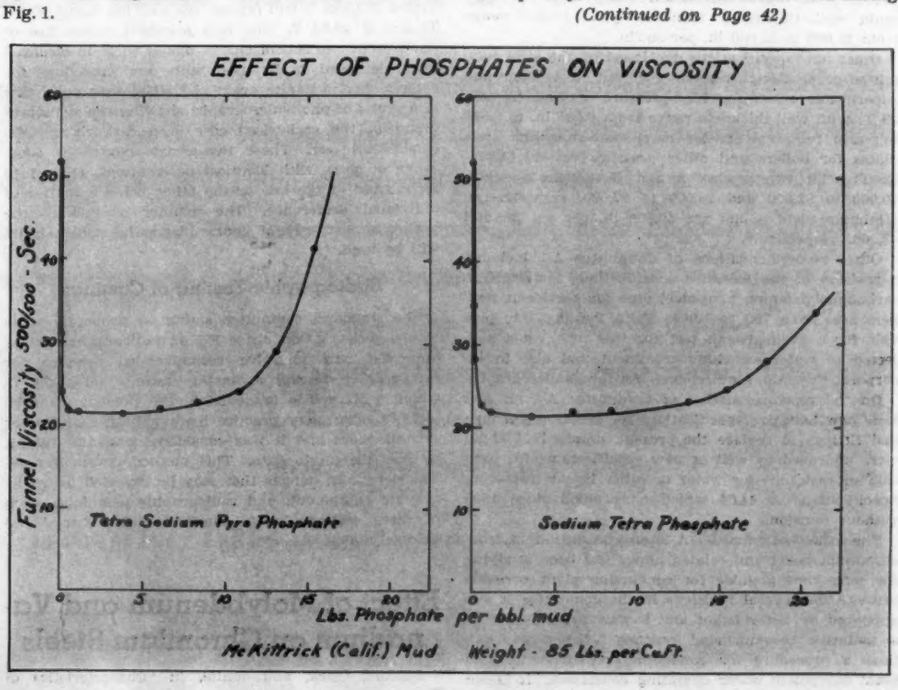

EFFECT OF PHOSPHATES ON VISCOSITY
Funnel Viscosity 500/500 - Sec.
Tetra Sodium Pyro Phosphate
Sodium Tetra Phosphate
Lbs. Phosphate per bbl. mud
McKittrick (Calif.) Mud Weight - 85 Lbs. per Cu.Ft.

Fig. 1

Progress in METALS

By W. L. NELSON

New Standards Approved By A.S.T.M.

AT its recent meeting at A.S.T.M. headquarters the society's Committee E-10 on Standards, which in the interval between annual meetings has the authority of approving proposed new tentative standards for publication, revisions of existing tentative standards or tentative revisions of existing standards, acted on a large number of recommendations from the standing committees on materials. Many new important specifications cover materials on which A.S.T.M. had not previously issued any standardized requirements.

While quite a number of the actions resulted from the desire of various committees to have their existing specifications and tests in the best possible shape for inclusion in the 1939 Book of A.S.T.M. Standards, many of the actions or recommendations on new standards resulted from work under way during the past year or more.

Not all of the revisions are of interest to the petroleum industry and hence only part of them are reviewed here.

Ferrous Metals

New tentative specifications for carbon-steel forgings (A 18-39 T) provide for nine classes of material depending upon the use and heat treatment. These specifications resulted from an effort to consolidate into one document various requirements for carbon-steel forgings. Tensile strength ranges from 47,000 lb. per sq. in. in the untreated range, all sizes, to 90,000 lb. per sq. in. in Class G (quenched and tempered) 4 in. maximum outside diameter, 2 in. maximum wall thickness. Minimum yield points range from 25,000 to 55,000 lb. per sq. in.

Other new specifications developed by the steel committee cover electric-resistance-welded steel boiler and superheater tubes for high-pressure service (A 226-39 T) with wall thickness range from 0.085 in. to 0.360 in.; also requirements for manganese-vanadium steel plates for boilers and other pressure vessels (A 225-39 T) with two grades, A and B (tensile strength, 70,000 to 82,000 and 75,000 to 87,000, respectively). Minimum yield points are 40,000 lb. per sq. in. and 43,000, respectively.

Other recommendations of Committee A-1 included a revision of the tentative specifications for seamless carbon-molybdenum alloy-steel pipe for service at temperatures from 750 to 1,000° F. (A 206-38 T) to provide for a grain-growth test for this pipe when subjected to water-quenching treatment and also to incorporate certain requirements for photomicrographs.

On the recommendation of Committee A-3 on cast iron, new tentative specifications for cast-iron soil pipe and fittings to replace the present standard (A 74-29) were approved as well as new specifications for cast-iron pit-cast pipe for water or other liquids replacing Specifications A 44-04 which have stood since 1904 without revision.

The society's Committee A-10 on iron-chromium, iron-chromium-nickel and related alloys has been studying for some time a guide for conducting plant-corrosion tests. After several revisions in the committee it was approved by letter ballot and is now to be issued as a tentative recommended practice. This guide outlines a procedure for conducting corrosion tests in plant equipment under operating conditions. It is not intended for atmospheric or underground-corrosion tests but may possibly apply to other tests under natural conditions where the procedure has proven satisfactory. Corrosion testing by its very nature precludes the possibility of complete standardization. The practices are presented as an aid to those conducting corrosion tests so that some of the pitfalls of such testing may be avoided. It is not intended as a standardized procedure, but merely as a guide. The guide covers apparatus for mounting specimens and their preparation, duration of a test, cleaning of the specimens, examination before and after test, reporting, etc.

Metallography—Grain Size

Because of the rules governing the preparation of micrographs of metals and alloys including recommended practice for photography as applied to metallography (E 2-36) were in need of revision, having stood unchanged for 3 years, the committee in charge, E-4 on metallography, as a result of intensive work during the past year submitted proposed tentative rules which replace the existing standard and which will carry the designation E 2-39 T. Changes were rather extensive and it was felt a new standard was desirable to replace the older one. These rules which are of widespread service cover such items as standard magnifications, reproduction of micrographs, lenses, method of measurement of grain size, use of grain size in specifications. In the section on recommended practice for photography as applied to metallography. the material is divided into the following: Magnifications, lenses, illumination of specimens, photographic materials.

The proposed tentative standard for classification of austenite grain size in steel which carries the designation E 19-39 T will replace the existing items, E 19-33 and E 19-38 T. The new standard makes use of the present two sets of charts, one of them in idealized form, intended to be used with any procedure for determining austenite grain size, the other consisting of a series of photomicrographs showing the structures found in the carburized case in a carburizing (McQuaid-Ehn) test. These two charts cover the same range of sizes, with identical designations, (Nos. 1 to 8), the use of the one or the other being a matter of individual preference. The manner of making the grain-size test may of course determine which chart will be used.

Radiographic Testing of Castings

The standards committee acting on proposals made by the society's Committee E-7 on radiographic testing approved new tentative recommended practice for radiographic testing of metal castings (E 15-39 T) which will replace immediately the present standard E 15-29. The older practice has not been changed for several years and it was considered essential that it be brought up to date. This method covers general considerations, defects that may be revealed by radiographic equipment, and radiographic technique—each of these sections being classified under X-rays and gamma rays.

Effect of Molybdenum and Vanadium on Chromium Steels

Hildorf, Clark, and White, in "Characteristics of 5.0 and 7.0 Per Cent Chromium Steels With Varying Molybdenum and Vanadium Content," which was presented before the twenty-first annual convention of the American Society for Metals, Chicago, October 1939, conclude as follows:

"The results obtained permit the following conclusions with respect to the influence of variations in the molybdenum and vanadium content on certain of the characteristics of 5.0 and 7.0 per cent chromium steels:

"1. The short-time strength characteristics at room temperature and 1,200° F. and the rupture strength at 1,200° F. are in general continuously increased as the molybdenum content is varied through steps of about 0.50, 1.0, 1.5 and 2.0 per cent.

"2. These same characteristics are in general increased upon the first addition of vanadium but are then decreased as the vanadium exceeds a certain amount. In the case of the 5.0 per cent chromium steels, the trend changes at 0.50 per cent vanadium, and with the 7.0 per cent chromium steels at 0.18 per cent vanadium.

"3. The microstructures show that in the lower silicon steels, delta iron does not appear until 2.0 per cent molybdenum is present while only 0.18 per cent vanadium is sufficient to cause the appearance of this constituent in the 7.0 per cent chromium steels, and 0.5 per cent in the 5.0 per cent chromium steels.

"4. A relationship is believed to exist between the strength characteristics and the microstructures in that the strength decreases as the amount of delta iron exceeds a certain amount. It is for this reason that vanadium additions in excess of a given amount decrease, rather than increase, the strength.

"5. Variations in the chromium content did not exert the same influence on the 1,200° F. rupture strength of the molybdenum and vanadium-bearing steels. For the same silicon content an increase in the chromium content from 5.0 to 7.0 per cent did not appreciably influence the rupture strength of the steels containing 1.0 per cent or more molybdenum while it decreased the rupture strength of all the steels containing vanadium."

●

Metal Spraying

Book abstract.—Metal spraying, by T. H. Turner and N. F. Budgens, revised by E. C. Rollason. Published by J. B. Lippincott Co., Philadelphia, Pa., 1939; cloth, 6 by 9, 235 pp., $7.50.

The vital interest of the petroleum industry in any method or process by which the ravages of corrosion may possibly be alleviated makes this book particularly worthy of attention. Metal spraying has already been used in the industry but with varying success, and hence this unbiased book will be valuable in judging further applications of the process.

Development of modern metal-spraying pistols.
Modern metal-spraying pistols.
Sand blasting and efficiency of spraying.
Nature of sprayed metal.
Comparison with other methods of metallization.
Applications of the process.

The inclusion of eight pages of references on the subject of metal spraying will be found useful.

In reviewing the book, Dr. H. W. Gillett states: "This has been the standard reference book on metal spraying, and the new edition maintains its position."

This, the second edition, contains about 60 pages and 30 figures more than the original edition and is brought to a data of 1938. Included in the new information are descriptions of new spray guns, a gun for firing powder rather than wire, precautions against health hazards and a more detailed discussion of other topics.

Those who are not familiar with the first edition of the book will welcome the following list of chapter headings:

Early attempts at metal spraying.

Metallurgical Terms

Scleroscope Hardness

Scleroscope hardness is a measure determined by an instrument that permits a tiny hammer to drop a definite distance against the surface and subsequently measures the rebound of the hammer. Arbitrary hardness numbers have been assigned to the height of the rebound and are known as Scleroscopic hardness numbers (see Brinell hardness).—From A.P.I. Code 28.

BEARING THE BRUNT OF IT!

If a slush pump fails, even momentarily, the consequences are likely to be both serious and expensive. Every part of such pumps has its work cut out for it. But what with high pressures and the continuous flow of abrasive material it is the fluid end that gets the toughest assignment.

Slush pump fluid ends that are cast of Nickel-Molybdenum cast iron are proving consistently to be more than equal to the exacting requirements.

Due to the extra strength imparted by the Molybdenum content of the iron, it is possible to lighten the weight of the casting and still be assured of ample ability to withstand the pressure. And, in addition, Nickel-Moly iron has the hardness needed to resist the abrasive action of the cuttings passing through the pump.

Detailed information on Molybdenum irons used in drilling equipment will be found in our free technical book, "Molybdenum in Cast Iron".

PRODUCERS OF MOLYBDENUM BRIQUETTES, FERRO-MOLYBDENUM, AND CALCIUM MOLYBDATE

Clima[illegible] Molybdenum Company
500 Fi[illegible] Ave., New York City

MOLY

Complex Phosphates for Deflocculation of Drilling Mud

(Continued from Page 39)

the drilling period and the cumulative effect of these added chemicals must be considered.

TABLE 2—EFFECT OF PHOSPHATES ON VISCOSITY

	Funnel viscosity 500/500 seconds	
Amount phosphate added—lb./bbl.	Tetrasodium pyrophosphate	Sodium tetraphosphate
0.0	52.2	51.8
0.06	31.4	34.6
0.15	24.2	27.0
0.58	21.6	22.6
1.17	21.6	21.8
3.79	21.4	21.4
6.12	22.0	21.8
8.45	23.0	22.0
10.8	24.2	...
13.1	29.0	23.0
15.5	21.6	24.6
17.8	66.0	28.2
20.8	...	33.8

Table 2 and the curves in Fig. 2 show the effect of the repeated additions of pyrophosphate and tetraphosphate to separate mud samples. From the rapid increase in viscosity after a certain amount of pyrophosphate has been added, it appears that the accumulation of this material in the mud will be harmful. The same effect is frequently noted in drilling practice when this chemical is used, but the tests recorded here are considered preliminary and a more detailed study is being made, since the cumulative amounts that will cause thickening in commercial drilling mud may differ in some degree from the results obtained from the conditions of these tests.

From the data given above, it is apparent that "complex" phosphates as a class are good reagents for lowering the viscosity of drilling mud by deflocculation, but there are definite chemical differences between the members of this class corresponding to the different effects they have on drilling muds.

Based on the tests we have made, and actual experience in the field, the following conclusions appear to be justified:

Tetrasodium pyrophosphate.

1. Has a very sharp deflocculating effect on fresh mud.
2. It is quite stable in solution but has low solubility.
3. Its pH value is higher than that of other "complex" phosphates.
4. Accumulations of tetrasodium pyrophosphate

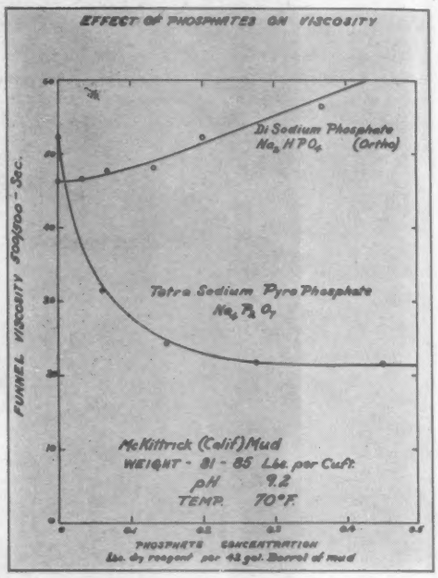


Fig. 2

in drilling mud will tend to increase viscosity and this effect will retard sand settling before the increasing viscosity is apparent.

Sodium tetraphosphate.

1. Has a deflocculating effect equally as sharp but has been observed to aid sand settling to a greater degree than the pyrophosphate.
2. It is quite stable in solution.
3. It has a pH value at about the neutral point.
4. High concentrations have little tendency to increase viscosity, or, in other words, overtreatment is not apt to occur.

Handling of Cathead

The faster the cathead on a rotary drilling rig is turned the greater the friction generated; thus heavy loads can be moved or light loads moved with great speed. The danger also increases with the speed and a serious accident may result from turning the cathead faster than is necessary for the task at hand.

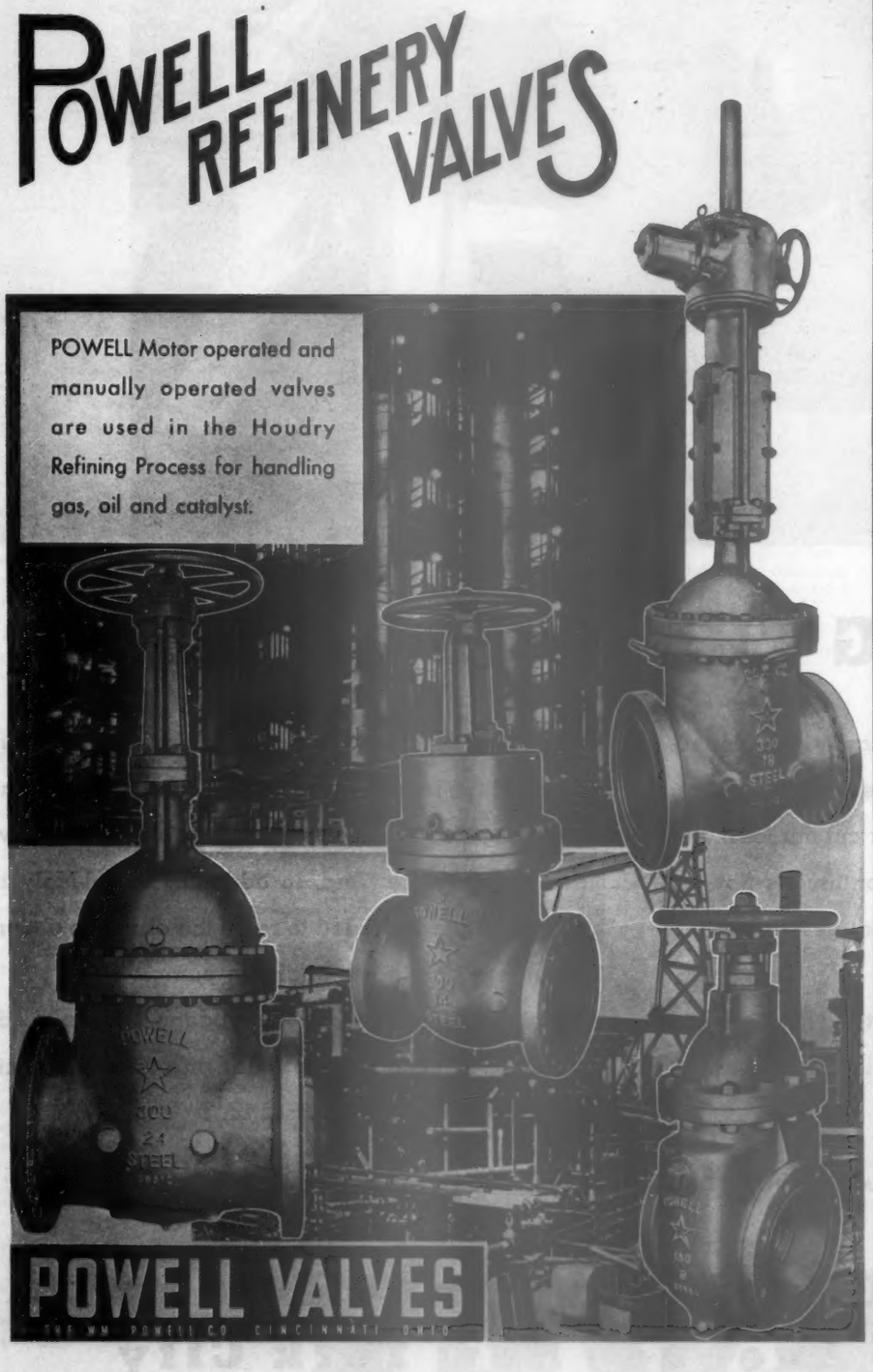
The friction generated is also proportional to the number of loops used, but too many loops are also dangerous as the load may be moved too fast and in case the line breaks it will invariably foul on the cathead. Putting on just enough loops to move the load and running the cathead at a moderate speed is the safest practice.

Care in putting the loops on the cathead is also essential and each loop should be tight before putting on the next one.

The rope must be removed from the cathead as soon as it is unloaded and the removal should be done carefully and quickly. The rope can be prevented from fouling by holding the loops of rope on the cathead with the right hand so there is just enough slack to prevent gripping, or the rope may be held with the right hand just enough to prevent fouling. The left hand can then be used to remove the individual loops.

POWELL REFINERY VALVES

POWELL Motor operated and manually operated valves are used in the Houdry Refining Process for handling gas, oil and catalyst.



POWELL VALVES
THE WM. POWELL CO. CINCINNATI, OHIO

QUESTIONS ON TECHNOLOGY

By Charles K. Francis, Ph. D., Technical Editor

Corrosive Action of Phosphoric Acids on Common Metals

How corrosive is 75 per cent liquid phosphoric acid toward the common metals at ordinary temperatures? Can it be successively handled in relatively inexpensive equipment other than glass-lined or rubber-lined vessels?—K. B.

Kasting and Heins have investigated the corrosive action on 52 metals and alloys by chemically pure and crude phosphoric acids, under various conditions using 10, 25, 50 and 85 per cent C.P. acids, and dilute and concentrated acids. These investigators give extensive data. A part of one table showing the action of phosphoric acid of different concentrations is given in the table.

CORROSION BY PHOSPHORIC ACID

Acid Concentration

	Dilute			Medium			Concentrated		
Sample—	Acid per cent	°C.	Corrosion rate cm./day	Acid per cent	°C.	Corrosion rate cm./day	Acid per cent	°C.	Corrosion rate cm./day
Aluminum	Poor in all concentrations			..	..	.....	72	17	0.0039
Tank-car steel	..	..	.....	..	..	.....	72	17	0.016
Mild steel	5	18	0.0034	25	18	0.0080	80	17	0.010
Bronze	10	22	0.00002	35	22	0.000013	50	22	0.000008
Monel	..	..	.....	..	..	.....	72	17	0.000002
Red Cross	..	..	.....	30	b.p.	0.019%/hr.	..	..	.....
Duriron	10	82	0.000002	25	82	0.000003	87	82	0.000003
Hastelloy	10	70	0.00001	..	..	.....	40	70	0.00002
Stainless steel	5	Slight		25	Slight		75/100	Slight	
Stellite	5	Nil		25	Nil		50/100	Nil	

Note: When a range of temperature was shown, the lower has been used in this table.

The following is quoted from the reference:

"This work has indicated that 18 per cent chromium should be present in stainless irons used to resist C.P. acids; that the presence of 8 per cent nickel with 10 per cent chromium is beneficial, and that more nickel is detrimental for use in C.P. acid and very beneficial for use in crude acid (35); that corrosion resistance increases with the chromium content; that concentrated acid attacks stainless irons more than dilute acids; that there is a maximum temperature for each alloy above which it should not be used in concentrated acid; that this maximum temperature is the temperature at which the stainless iron becomes the anode of the cell.

Stainless iron (H_3PO_4) tungsten

Only a few of the nonferrous alloys can be compared to show relationships between composition and corrosion resistance to phosphoric acid. For instance, the higher the aluminum content of copper-aluminum-iron alloys, the better the corrosion resistance to C.P. acid. The corrosion resistance to C.P. acid is decreased, but to crude acid increased by the presence of iron. Nickel is very detrimental to the corrosion resistance of these alloys.

A corrosion rate of 1×10^{-5} cm. per day may be regarded as indicative of a resistant material. Those alloys whose corrosion rate is 10×10^{-5} cm. per day may be regarded as of doubtful use. Thus in C.P. acids the stainless irons and steels, Illium G, Tantalum, Duriron, silver, chromium, Hastelloy C, and Hills-McCanna 45 (concentrated acid) are possible resistant metals, and in dilute crude, 28 per cent chromium steel Tantalum, lead and its alloys, Hastelloy D, and Illium G. If Duriron be taken as a standard for crude acid, then Hastelloy C, high nickel 18 per cent chromium steels, and chromium may be also considered."

Reference: Peter R. Kasting and Conrad Heins, Jr., Corrosion of Metals by Phosphoric Acid. Ind. Eng. Chem. 23, 140, 1931.

Solubility of Substances Shown by Numerals in 100 Parts

What is the proper method for indicating the extent of solubility of any chemical in water or any liquid?—M. L.

Every material has a definite solubility so there must be a fixed relation between the quantity of the dissolved substance and the solvent. This is conveniently expressed by the quantity that will go into solution at a stated temperature per 100 parts of the solvent. It is commonly shown as grams in 100 ml., therefore considered as the approximate per cent. Examples—Copper sulfate, $CuSO_4.5H_2O$, cold water, 32.96—20°, means that 32.96 g. of the salt is soluble in 100 ml. water at 20° C.

Sodium chloride, NaCl, hot water, 39—100°, means that 39 per cent of this compound is soluble in 100 ml. of water at 100° C., the boiling point at sea level.

Physical and Chemical Laws and Principles Used in the Petroleum Industry

SURFACE TENSION

THERMAL CAPACITY AND SPECIFIC HEAT

The thermal capacity of a substance indicates the quantity of heat necessary to produce a unit change of temperature in a unit mass. It is expressed in scientific work as calories per gram per degree Centigrade. Ordinarily it is the heat required to raise the temperature of 1 lb. of the substance 1° F.

It is expressed in numbers, which are specific heats, as shown in the table. Water is 1.000.

Substance—	Specific heat	Substance—	Specific heat
Asbestos	0.200	Iron, cast	0.130
Brick	0.220	Copper	0.093
Cement	0.271	Paraffin	0.589
Cork	0.485	Gasoline	0.530
Glass	0.200	Kerosene	0.470

Note—See October 5, 1939, for Specific Heat and Delong and Petit's Law.

Compressibility or Bulk Modulus of Water and Other Liquids

Can you refer me to data on the bulk modulus or compressibility of water, petroleum and casing-head gasoline?—L. E. D.

A fundamental characteristic of a perfect liquid is that of absolute incompressibility. This is not scientifically true for liquids such as water and oil are compressible to a very slight degree. The extent to which oil may be compressed depends on the proportion of gas which it holds mechanically or in solution. For ordinary engineering purposes water is assumed to be incompressible. At a depth of 1 mile, being under a pressure of about 2,285 lb. per sq. in., the weight of a cubic foot of water is only approximately ½ lb. more than at the surface. For each foot of pressure distilled water will decrease in volume from 0.0000015 to 0.0000013.

The bulk modulus, or volume modulus of elasticity of water varies with the temperature and the quantity of air in solution. It is expressed by:

$$M_B = \frac{p_2 - p_1}{\frac{v_1 - v_2}{v_1}}$$

where p_1, p_2; v_1, v_2 are the initial and final pressure and volume respectively. At 50° F. the bulk modulus of water is approximately 300,000 lb. per sq. in.

The degree of compression of water at 15 lb. per sq. in. when compared with several liquids under the same conditions is illustrated by the following:

Water	0.00004663 to 0.000051
Alcohol	0.0000215
Ether	0.00006158
Mercury	0.00000265

It is fortunate that water is not compressible for if it were our great bodies of water could not exist and underground streams or storage would be impossible. When there is compression heat produced, giving evidence of molecular activity, well illustrated when using a small pump to put air in a tire and the heat developed in a cylinder when compressing gas.

The mean coefficient of compressibility between p_1 and p_2 is defined by the equation:

$$B = \frac{v_{p_1} - v_{p_2}}{v_{p_1}\,(p_2 - p_1)}$$

Within the accuracy of the measurements for kerosene and lubricating oils, all available data are correctly expressed by:

$$\frac{10^{-6}}{B} = a + bp - cp^2 + dp^3$$

in which $B = \frac{v_o - v_p}{v_{op}}$ is the mean coefficient between o and p.

References: O'Rourke, General Engineering Handbook. Perry, Chemical Engineering Handbook. Kent, Mechanical Engineering Handbook. International Critical Tables, Vol. III, p. 40.

Kaltenborn gets the answers

When H. V. Kaltenborn, radio's foremost news analyst, wants information, he gets it from men who know what they're talking about. Here's what he learned when he interviewed a typical Pure Oil dealer recently.

KALTENBORN: Did Pure Oil's advertising bring you any new customers last year?

DEALER: I'll say it did! I can trace a big increase in my monthly income to your radio program and the newspaper ads.

KALTENBORN: How many Kaltenborn Maps of Europe did you give out?

DEALER: As many as I could get my hands on. That map was the biggest traffic-builder any dealer ever had.

KALTENBORN: What about the Solvenized Tune-Up Treatment and Pure Oil's Solvenized* Gasoline?

DEALER: They turn the new customers into regular customers. Motorists want to keep excess carbon under control. And I've got the products that do it—something no other dealer has.

KALTENBORN: How do things look for 1940?

DEALER: Great—I'm looking forward to an even better year.

If you or your dealers are not profiting with Pure Oil's products and merchandising helps, better write or phone your nearest Pure Oil office.

*Reg. U. S. Pat. Off.

"KALTENBORN EDITS THE NEWS"—for and by Pure Oil dealers, every Monday, Wednesday, and Friday, Columbia network.

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be sure with Pure

THE PURE OIL COMPANY, U.S.A. PURE

FIELD OPERATIONS

Summarizing the Week's Developments

ILLINOIS—The theme of the hour in Illinois is to what heights production will go as a result of the rush of drilling to the Devonian lime where wells ranging from 800 up to 6,200 bbl. have been recorded thus far in Marion and Clinton counties, and where nearly 100 wells are drilling or about to start drilling for the Devonian formation. Some observers think that the production of Illinois will be limited only to the volume of oil the pipe-line companies and other transporters can ship to refiners.

OKLAHOMA—The thirty-seventh producer in the Ramsey pool, Payne County, was completed in Wilcox sand for daily potential of 5,792 bbl. of oil. Large Wilcox-sand producers also were completed in the Billings pool, Noble County, and St. Louis field, Pottawatomie County. Continental Oil Co. announced plans to drill a 10,000-ft. test on its 22,000-acre block in Washita County.

KANSAS—The North Bornholdt discovery well in McPherson County was deepened 4 ft. in chat, production increasing from the initial 180 bbl. to 1,383 bbl. The Wherry pool, Rice County, was given two successive ¼-mile westward extensions. The Big Creek pool, Russell County, was extended ¾ mile southeastward.

TEXAS: Gulf Coast—Deep-sand production was opened on the northwest flank of the old Fannett dome in Jefferson County. The discovery well flowed 420 bbl. of 34-gravity oil in 12 hours through ¼-in. choke.

Southwest Texas—Production from new sands was opened in the White Point pool in San Patricio County and Richard King pool in Nueces County. Several wildcats were giving favorable oil indications.

West Texas—A well flowing 100 bbl. per hour opened production in the lower Ellenburger lime (Ordovician), 2 miles or more south of the Apco deep pool in Pecos County. The North Cowden and Foster pools in Ector County were brought closer together by a well flowing 170 bbl. per day while drilling.

North Texas—Operators in the Hull-Silk and Sikes pools in Archer County have petitioned the Railroad Commission to classify them as one pool for proration purposes. Wildcats in the district are following definite deep trends, especially in Clay and Archer counties.

Eastern Texas—Large drilling blocks assembled last year are due for exploration this year. The first to be tested will be the Hawkins block in Wood County. Shell Oil Co., Inc.'s deep test in Smith County is a failure at 8,600 ft. and will be plugged back and tested in upper levels.

LA-ARK-TEX—An important deep outpost to the Dorcheat field in Columbia County, Arkansas, was abandoned at 9,069 ft.

MICHIGAN—Two big wells were completed in the Redding pool in Clare County. Five wells were completed in the Tallmadge, Ottawa Township, field which is an extension to Kent County production.

MISSISSIPPI—Hassie Hunt's No. 2 Johnson in the Tinsley field in Yazoo County gaged 40 bbl. per hour through ¼-in. choke from sand at 4,378-98 ft., total depth 4,875 ft. It is rated at 575 bbl. per day. A wildcat in Sharkey County was drilled to 4,060 ft. without finding pay. Drilling was suspended but the pipe was left in the hole.

Completions in All Fields

(Week Ended January 27, 1940)

	Oil	Gas	Dry	Total	1940 total comp. to date	1939 total comp. to date
N. Y., Pa., and W. Va.	45	12	4	61	346	278
Ohio	8	6	0	14	84	84
Indiana	5	2	1	8	32	10
Kentucky	4	0	2	6	27	55
Illinois	49	0	8	57	317	337
Michigan	12	0	6	18	124	80
Kansas	19	0	3	22	120	87
Oklahoma	14	0	9	23	149	144
Texas:						
North Central Texas	30	4	11	45	264	166
West Texas	25	0	3	28	212	153
Texas Panhandle	11	1	0	12	59	32
East Texas	6	0	0	6	25	86
East Central Texas	1	0	0	1	24	24
East Texas Border	0	1	0	1	4	7
Gulf Coast Texas	18	1	10	29	132	110
Southwest Texas	27	2	12	41	206	173
Total Texas	118	9	36	163	926	751
North Louisiana	4	1	1	6	56	41
Gulf Coast Louisiana	12	0	1	13	81	56
Total Louisiana	16	1	2	19	137	97
Arkansas	4	0	1	5	26	30
Montana	1	0	0	1	18	11
Wyoming	2	0	0	2	19	6
Colorado	0	0	1	1	3	1
New Mexico	2	0	1	3	75	60
California	18	0	1	19	99	78
Total United States	317	30	75	422	2,502	2,109
Total previous week	320	36	119	475		
Week ended Jan. 28, 1939	318	24	92	434		

Outstanding Fields—Highlights

(Week Ended January 27, 1940)

FIELD—	Rigs up	Wells drlg.	Weekly oil completions	Initial prod.	Total No. oil wells	Daily av. prod.
TEXAS						
K.M.A.	30	38	6	4,554	1,243	25,640
Wasson-Bennett	24	81	5	2,717	620	25,683
Ector County	18	65	11	18,957	1,943	53,479
Pecos County	9	22	3	102	1,284	34,257
Jones County	4	16	3	811	576	8,000
East Texas	9	17	6	250	26,011	394,396
OKLAHOMA						
St. Louis	5	24	0	0	921	34,500
Cement	5	21	1	30	284	6,600
KANSAS						
Barton County	5	21	0	0	464	12,930
Ellis County	5	18	4	1,261	478	17,740
Rice County	4	22	2	680	1,423	30,439
Russell County	5	23	6	2,405	1,465	30,850
NEW MEXICO						
Lea County	12	56	1	1,200	2,362	86,870
Eddy County	6	54	1	195	507	15,180
LA-ARK-TEX						
Cotton Valley, La.	0	4	0	0	153	14,050
Magnolia, Ark.	4	8	3	992	87	20,085
MICHIGAN						
Freeman-Redding	2	9	2	5,760	138	13,862
Kent County	4	37	2	88	266	16,597
CALIFORNIA						
Montebello	2	18	2	827	346	26,950
ILLINOIS						
Salem	19	89	18	20,314	1,613	207,360
Louden	6	44	15	2,246	1,321	73,688
Other basin fields	35	202	16	9,397	3,417	68,470
Old fields	....	....	....	.....	.....	7,600

By STAFF CORRESPONDENT

28 New Devonian-Lime Tests Are Started in Illinois Fields

SALEM, Ill., Jan. 29.—Only 49 oil wells were completed in Illinois last week, but a batch of Devonian-lime wells of the gusher type in Marion County brought the average initial production per well up to a relatively high figure. In Marion County 18 new wells registered 24,514 bbl. of oil their first day. Fayette County's 15 new oil wells made 2,246 bbl. the first 24 hours; 3 in Richland County gaged 1,804 bbl.; 3 in Clinton County, 2,081 bbl.; 3 in White County, 463 bbl.; 4 in Wabash County, 356 bbl.; 2 in Clay County, 446 bbl., and 1 in Washington County, 47 bbl. One dry hole each in Coles, Bond, Clinton, Marion, Jefferson, and Wabash counties and two in White County account for the eight drilling failures reported.

Magnolia Petroleum Co.'s No. 31 W. B. Young, in Section 20-2n-2e, Salem pool, which flowed 2,964 bbl. of oil and 35,000,000 cu. ft. of gas from Devonian-lime pay at 3,374-3,416 ft., in which it was acidized with 5,000 gal., increased its output to 5,974 bbl. per day when deepened a little. The largest initial producer from the Devonian was W. C. McBride, Inc.'s No. 17 Lee, also in Section 20, which flowed over 6,200 bbl. in 24 hours. This well has fallen off to 3,850 bbl. per day. Texas Co.'s No. 19 D. Young, in Section 21, made 3,430 bbl. initially from the Devonian in the past week. Shell Oil Co., Inc., got a 3,100-bbl. Devonian producer in No. 9-C Salem State Bank, in Section 21. Magnolia Petroleum Co.'s No. 31 S. Shanafelt, in Section 29-2n-2e, was good for 2,435 bbl. the first 24 hours. A later report credited it with increasing to 4,855 bbl. a day. Kingwood Oil Co.'s No. 22-A Shanafelt, SW NE NE Section 20-2n-2e, total depth 3,414 ft., was credited with 3,600 bbl. a day. In the Sandoval field, where Devonian lime was first developed in a large way, a dry hole in that formation was the only result in last week's operations. In the Tonti field, also in Marion County, Arthur Harvey's No. 6 Kagy gaged 4,200 bbl. per day through a 1-in. choke, after a second acid treatment, which even surprised the owners whose optimism, it is said, had not caused him to expect so large a production. A previous acid treatment had brought out a production of 40 bbl. per hour. Mr. Harvey opened the Tonti field last year with a McClosky-lime well. The field also yields from Benoist and Aux Vases sands.

In the old Centralia townsite field in Clinton and Marion counties, Algona Oil Co.'s No. 1 Skipper-Koehler, in Lot 4, Block 1, Pullen subdivision, flowed 888 bbl. a day after a 500-gal. acid treatment, total depth of the hole 2,906 ft. This well is only a few feet from No. 1 Dave Gum, a 715-bbl. well that opened Devonian-lime production in the Centralia field.

The Bartelso field in Clinton County has its second Devonian producer, Paul Mosebach's No. 1 Maddox, which flowed 1,047 bbl. initially.

Fifty-four Devonian-lime oil wells have been completed in Illinois in the past 13 months; 25 of these have been completed recently in the Salem field. In the Sandoval field, where Devonian production was discovered in the basin area, 22 producing wells have been completed; the Centralia field has had 3 completions; Bartelso, 2, Tonti 1 and a small Devonian well was completed last year in the Sorento field in Bond County. The Devonian wells in the Salem field have ranged from 2,000 to 6,200 bbl. in initial production. Including last week's new operations there are 98 wells scheduled for Devonian-lime pays in Salem alone.

Among the new operations in the state last week were 28 wells scheduled for the Devonian lime in Township 2n-2e, Salem pool, and 8 wells which will go to the Devonian in the Centralia townsite field, most of them on the western side of that field in Clinton County. In the Salem pool, Shell listed nine Devonian starts; Magnolia six, Texas seven, Ohio four, and W. R. Curry two on a strip lease. In the Centralia field Vogt and others, Egyptian Refining Co., Spitznagle and Moore, Lilly and others, Algona Oil Co., Selegna Oil & Gas Co., and Jones & Deator will drill to the Devonian one well each, and in Bartelso, Clinton County, Paul Mosebach has started a Devonian test.

Production fell off considerably in the past week from the previous week's average of 366,931 bbl. per day. For the week ending Saturday, January 27, the average for the state was 357,118 bbl. per day, divided as follows: Salem, 207,360 bbl.; Louden, 73,688 bbl.; other basin fields, 68,470 bbl.; and old fields, 7,600 bbl.

Angle & Eason were getting ready to test a showing in limestone at 2,803-13 ft. in No. 1 Duffy, NE NW NW Section 25-8s-9e, Gallatin County, after setting 5½-in. casing at 2,930 ft.

Hayes & Wolf were reported to have penetrated 13 ft. of McClosky lime at 2,688-2,708 ft. in their wildcat No. 1 D. Seibert, NE NE NE Section 4-1n-13w of second principal meridian, Wabash County.

O'Meara Brothers' No. 1 Utter, SE SE NE Section 17-1s-12w of second principal meridian in Wabash County, pumped 18 bbl. a day from Cypress sand, total depth 2,050 ft. The sand had not been shot. The well had been drilled to the McClosky lime which was barren of oil, and plugged back. It was to be given a shot in the Cypress sand.

Aux Vases production is reported in the Fairman pool in Marion and Clinton counties, which has been producing only from the Benoist sand. Cascade Oil Co.'s No. 4 Adams, SE NE SE NE Section 13-3n-1w, Clinton County, swabbed 1 bbl. of oil per hour from a total depth of 1,463 ft., reported to be Aux Vases sand.

Following were the completions of the week, the initial production given representing 24 hours unless otherwise noted:

In Coles County LeRoy Trulock's No. 2 fee, SE SE NE Section 18-12n-15w, was reported abandoned, a hole full of water at 505 ft. It had a small showing of oil at 455-60 ft.

Fayette County

In Fayette County, Louden field, Carter Oil Co.'s No. 5 F. P. Sinclair, SW NW NE Section 2-8n-3e, was shot with 40 qt. at 1,584-1,604 ft., with no results, and shot with 20 qt. at 1,524-29 ft. (Cypress sand). Swabbed 174 bbl. in 24 hours. Carter's No. 9 Leonard Wood, SW SW SW Section 15-8n-3e, shot with 60 qt. at 1,420-44 ft., swabbed 90 bbl. per day. Carter's No. 7 Drees, NW NW NW Section 22-8n-3e, shot with 40 and 30 qt., at total depth of 1,533 ft., pumped 74 bbl. Carter's No. 3 Mills, SW SW NW Section 28-8n-3e, total depth 1,550 ft., shot with 20 and 10 qt., swabbed 212 bbl. Carter's No. 10 Durbin, SE SW SE Section 5-7n-3e, total depth 1,587 ft., shot with 20, 30, and 25 qt., swabbed 360 bbl. Carter's No. 11 Durbin, SW SE SE Section 5-7n-3e, total depth 1,583 ft., shot with 40 and 10 qt., swabbed 138 bbl. Minerva Oil Co.'s No. 1 Ball, SW SW SE Section 16-7n-3e, Cypress sand 1,658-87 ft., shot with 5 qt., pumped 94 bbl. of oil and about 6 bbl. of water in 12 hours. Carter Oil Co.'s No. 5 Welker, SE NE NW Section 18-7n-3e, shot with 10 qt. at 1,507-10 ft., swabbed 48 bbl. Shell Oil Co., Inc.'s No. 14 Fulton, NE SW NW Section 28-7n-3e, Cypress sand at 1,562-79 ft., shot with 4 and 10 qt., pumped 66 bbl. Texas Co.'s No. 7 Wooten, SW SE SW Section 31-7n-3e, Cypress at 1,522-35 ft., pumped 189 bbl. without a shot. Texas Co.'s No. 4 McKee, SW SW NW Section 6-6n-3e, Cypress at 1,553-68 ft., not shot, pumped 120 bbl. Ohio Oil Co.'s No. 5 S. W. and A. E. Schworm, SW NW SW Section 31-6n-3e, Cypress at 1,586-1,611 ft., pumped 192 bbl. after a 10-qt. shot. Ohio's No. 10 J. Sworm, SE SE SE Section 36-6n-2e, St. James pool, Cypress at 1,593-1,615 ft., shot with 10 qt., pumped 163 bbl. Ohio Oil Co.'s No. 11 J. Sworm, SE NE SE Section 36-6n-2e, Cypress sand at 1,583-1,616 ft., shot with 10 qt., pumped 252 bbl. Ohio's No. 4 C. T. Williamson, SW SW SE Section 36-6n-2e, Cypress sand at 1,608-20 ft., shot with 10 qt., pumped 74 bbl. of oil and 6 bbl. of water per day.

In Bond County R. E. Jones' No. 1 Huber, NE NW NW Section 28-6n-4w, was plugged and abandoned at 1,450 ft.; lower Mississippian topped at 785 ft.

Richland County

In Richland County Pure Oil Co.'s No. 5 Murray A, C E½ SE SW Section 31-5n-10e, Dundas pool, total depth 2,885 ft., was acidized through perforations at 2,830-35 ft., with 5,000 gal. It flowed 528 bbl. of oil per day through 1-in. choke and showed about 3,000,000 cu. ft. of gas production. Pure's No. 3 Varner A, C E½ NW NW Section 6-4n-10e, flowed 411 bbl. per day through 1-in. choke from pays at 2,822-25 ft. and 2,830-35 ft., with no acid treatment. Pure's No. 4 Murray A, C W½ SE NW Section 6-4n-10e, pays at 2,838-41 ft. and 2,845-51 ft., flowed 865 bbl. per day naturally through 1-in. choke.

Clinton County

In Clinton County Shell Oil Co., Inc.'s No. 3 Kreitler, SE NE SE Section 13-3n-7w, Fairman pool, Benoist sand at 1,461 ft., total depth 1,471 ft., dry and abandoned. Shell's No. 2 Kreitler, NE cor. NW NE SE Section 13, had Benoist at 1,463-69 ft., and pumped 19 bbl. of oil and 17 bbl. of water per day.

In the Clinton County side of the Centralia pool, Algona Oil Co.'s No. 2 Skipper-Koeling, NW cor. SW SE NE Section 13-1n-1w, set 5½-in. casing at 2,895 ft., total depth 2,910 ft. After a 300-gal. acid treatment the well flowed 923 bbl. in 23 hours and then 1,015 bbl. in the next 24 hours through ¼-in. tubing choke.

Paul Mosebach's No. 1 Maddox, SW SW SW Section 4-1n-3w, Bartelso pool, had Devonian-lime pay at 2,408-34 ft., treated with 2,000 gal., flowed 1,047 bbl. in 22 hours.

Marion County

In Marion County, Tonti field, Harvey's No. 6-B Kagy, SE SE SE Section 33-3n-2e, topped Devonian lime at 3,485 ft., pay at 3,514-47 ft., total depth, acidized with 500 and 1,000 gal., flowed 4,200 bbl. per day through 1-in. choke.

In the Salem field Magnolia Petroleum Co.'s No. 74 J. H. Young, NW SE NW Section 28-2n-2e, McClosky lime at 1,985 ft., total depth 2,090 ft., acidized with 3,000 gal., pumped 205 bbl. Magnolia's No. 71 J. H. Young, C W½ NE NW Section 28-2n-2e, McClosky-lime top at 1,987 ft., total depth 2,095 ft., acidized with 3,000 gal., pumped 215 bbl. Texas Co.'s No. 11 Dunning, C W½ SE SE Section 30-2n-2e, McClosky top at 1,900-11 ft., total depth 1,971 ft., pumped 287 bbl. without acid treatment. Texas Co.'s No. 19 Wayman, C W½ NW NE Section 31-2n-2e, McClosky at 1,936-48 ft., pumped 226 bbl. Texas' No. 16 Williams, NE cor. NW SW SW Section 32-2n-2e, McClosky lime at 1,853-83 ft., flowed 252 bbl. naturally. Texas' No. 19 D. Young, NW cor. SW NW Section 21-2n-2e, Devonian pay at 3,430-59 ft., acidized with 1,000 gal., flowed 3,430 bbl. Shell Oil Co., Inc.'s No. 9-C Salem State Bank, SE NW SE Section 20-2n-2e, Devonian pay at 3,369-3,421 ft., acidized with 2,000 gal., flowed 3,100 bbl. Shell's No. 2-C Salem State Bank, NW NW SE Section 20-2n-2e, Devonian pay at 3,390-3,420 ft., flowed 1,200 bbl. naturally; acidized with 2,000 gal., it flowed 3,420 bbl. Ohio Oil Co.'s No. 33 M. Young heirs, NE NE SW Section 20-2n-2e, Devonian pay at 3,385-3,440 ft., flowed 271 bbl. naturally, but after a 2,000-gal. acid treatment, flowed 2,471 bbl. with 650 lb. of casing pressure and 65 lb. of tubing pressure. Magnolia Petroleum Co.'s No. 31 W. B. Young, NW SW NE Section 20-2n-2e, Devonian pay at 3,374-3,416 ft., acidized with 5,000 gal., flowed 2,964 bbl. of oil and 35,000,000 cu. ft. of gas; casing pressure 975 lb., tubing pressure 375 lb. Mag-

nolia's No. 31 S. Shanafelt, NE SW SE Section 29-2n-2e, Devonian pay at 3,378-3,415 ft., acidized with 5,000 gal., flowed 2,435 bbl.

In the south end of the Salem field Texas Co.'s No. 45 City of Centralia land, SE cor. SW¼ Section 4-1n-2e, Benoist sand at 1,863-94 ft., pumped 70 bbl. Texas' No. 9 Richardson B, NE cor. SE SE SE Section 5-1n-2e, McClosky lime at 2,020-43 ft., pumped 140 bbl. Texas Co.'s No. 5 Friederich, SE SE SW Section 6-1n-2e, Aux Vases sand at 1,826-64 ft., shot with 35 qt., flowed 224 bbl. Texas' No. 6 C. Friederich, SW cor. NW NE NW Section 7-1n-2e, shot with 40 qt. in Benoist and Aux Vases sands at 1,824-64 ft., flowed 224 bbl. Texas' No. 7 Friederich, SW cor. NE NW Section 7-1n-2e, Benoist sand at 1,820-45 ft., shot with 25 qt., flowed 210 bbl. Texas' No. 8 Friederich, SW cor. NW SE NW Section 7-1n-2e, shot with 40 qt. in Benoist and Aux Vases sands at 1,824-64 ft., flowed 441 bbl. Texas' No. 9 Friederich, NW cor. NE NW Section 7-1n-2e, shot with 20 qt. in Benoist sand at 1,831-51 ft., flowed 254 bbl.

In the Sandoval field E. F. Jones' No. 1 Kiscala, NE NW SW Section 9-2n-1e, was dry and abandoned at 3,109 ft. Devonian lime topped at 3,054 ft. tested only water.

White County

In White County Bishop & Harrington's No. 1 Griffin, SE SE SW Section 28-3s-9e, pumped 103 bbl. from Roseclaire and McClosky lime at intervals from 3,424-86 ft.

H. H. Weinert's No. 1 Weir, NE SE NW Section 29-3s-8e, was dry and abandoned in McClosky lime topped at 3,341 ft., total depth 3,390 ft.

Heenan & Coe's No. 1 Storms, NW cor. SE NE Section 23-6s-9e, in the Storms pool, Waltersburg sand at 2,230-61 ft., flowed 210 bbl. in 11 hours and was then shut in.

Jarvis' No. 1 Spencer, NW NW SW Section 31-4s-11e, total depth 3,076 ft., 13 ft. in McClosky lime showed only water. Plugged back to various levels all of which showed water; abandoned.

Superior Oil Co.'s No. 13 Ford, SW SE SW Section 4-5s-14w, Waltersburg sand at 2,159-92 ft., pumped 150 bbl.

In Jefferson County Beavers and others' No. 3 Eichman, NW cor. NE NE NE Section 28-2s-1e, dry and abandoned at 2,275 ft.

In Washington County Shell Oil Co., Inc.'s No. 1 Kazmerek, NE NW NE Section 19-3s-1w, shot with 2 qt. in Benoist sand at 1,360-62 ft., pumped 47 bbl. of oil and 43 bbl. of water.

Wabash County

In Wabash County Mabee Drilling Co.'s No. 2 Bump, SE SW NW Section 9-2s-13w, Cypress sand shot at 2,427-45 ft., with 40 qt., pumped 131 bbl. Mabee's No. 3 Bump, NE SW NW Section 9-2s-13w, Cypress sand, shot with 15 qt. at 2,435-45 ft., pumped 85 bbl. Continental Oil Co.'s No. 4 Grey, NE SE SW Section 20-2s-13w, pumped 35 bbl. from Biehl sand topped at 1,711 ft., after plugging back from 2,495 ft. Bartlett's No. 4 Gray, SW NW SW Section 29-2s-13w, total depth 2,596 ft., dry in Benoist sand topped at 2,572 ft., plugged back to 1,759 ft. and pumped 105 bbl. in 14 hours from Biehl sand topped at 1,722 ft.

In Wabash County D. & H. Drilling Co.'s No. 1 Troy, C S½ NE SE Section 31-1n-12w, was dry and abandoned at 2,442 ft.

Clay County

In the Clay City pool in Clay County Pure Oil Co.'s No. 1 Scrugham, C SE SW Section 18-2n-8e, Fredonia-lime top at 3,000 ft., total depth 3,120 ft., acidized with 1,500 and 5,000 gal., pumped 275 bbl. Pure's No. 1 A. Gill, C W½ NW NW Section 19-2n-8e, Fredonia pays at 3,008-15 ft. and 3,057-59 ft., acidized with 5,000 gal., pumped 171 bbl.

Orchard Oil Co.'s No. 1 Norton, C E½ NE NW Section 18-2n-8e, old total depth 3,040 ft.; casing perforated at 2,656-64 ft. and tested, finding only salt water and a small showing of gas; abandoned.

New Wildcat Operations

In Macon County Eureka Oil Corp.'s No. 1 W. F. Rhodes, SW SW NW Section 28-17n-3e, building derrick.

In Cass County Cass Community Oil Co.'s No. 1 Maslin, NW SE SE Section 2-17n-10w, set 8-in. casing at 255 ft., total depth 405 ft.

In Clark County National Consumers Oil Co.'s No. 1 Harper, C S½ SE NE Section 6-11n-14w, spudded and shut down. Kingwood Oil Co.'s No. 1 Booth-Poorman, SW NW NE Section 17-11n-14w, rigging up standard tools.

In Crawford County LaSalle Drilling Co.'s No. 1 Berryhill, 440 ft. from north and 330 ft. from east lines of NE NW Section 9-6n-13w, spudded and shut down.

In McDonough County R. G. Rigland's No. 1 Roberts, 1,760 ft. from north and 660 ft. from west lines of SW¼ Section 18-6n-4w, total depth 670 ft., shut down.

In Fayette County Roy E. Wilson's No. 1 Snodgrass, 343 ft. from north and 256 ft. from east lines of SW SE Section 34-6n-2e, rig up.

In White County Sun Oil Co.'s No. 2 Ford, C W½ NE SE Section 18-5s-14w, rigging up rotary.

INDIANA

EVANSVILLE, Ind., Jan. 29.—Five oil wells with a combined initial production of 415 bbl., two gas wells, and one dry hole comprised the crop of completions in Indiana in the past week in review. Shut-down drilling wells were numerous, both in northern and southern counties owing to the severity of the weather. Following is a report of active operations in the state when the wells were visited.

Posey County

In Posey County Superior Oil Co.'s No. 23 New Harmony, SW NE SW Section 10-5s-14w, flowed 85 bbl. naturally from sand at 1,487-1,517 ft. and was completed. Hollingsworth and others' No. 2 Keck, NE SE NW Section 34-3s-14w, was shot with 10 qt. in Aux Vases sand at 2,804-23 ft., and made a 75-bbl. pumper.

Joe Minton and others had rig up for No. 1 Hill, NW SE NW Section 7-5s-13w, corrected location. J. E. Crosbie, Inc.'s No. 4 Keck, SW cor. NW SW NE Section 34-3s-14w, was shot with 60 qt. at 2,808-18 ft. and was being cleaned out. Same operator's No. 5 Keck, SW cor. NE¼ Section 34-3s-14w, was drilling below 1,750 ft. McBride, Shirley and others' No. 1 Keck, SW cor. NE NE NW Section 34-3s-14w, was drilling below 1,060 ft. Roberts Brothers' No. 3 Keck, C N½ N½ NW Section 34-3s-14w, drilling below 2,200 ft. Somers & Egan's No. 2 Keck, SE NW NE Section 34-3s-14w, drilling below 1,760 ft. Continental Oil Co.'s No. 1 Kleiderer, NE NW NW Section 35-3s-14w, shut down at 2,512 ft., for orders. George Harsh and others' No. 1 Keck, NW cor. Section 35-3s-14w, total depth 2,810 ft., 7-in. casing, set at 2,772 ft., collapsed during a fishing job. Haynes & Thomas' No. 4 Seifert, NW cor. SW SE Section 19-6s-12w, old well deepened, had sand at 2,280-2,391 ft., with some free oil in the hole; testing. Brown, Ryan and others' No. 1 Spencer, C E½ SE SE Section 26-7s-15w, drilling at 380 ft.

Spencer County

In Spencer County Kelly and others' No. 1 Williamson, SW cor. NE NW NE Section 30-7s-6w, was completed as a 4,424,000-cu. ft. gas well in sand at 884-900 ft., total depth.

Damron Brothers' No. 1 Tullos-Williamson, NW cor. NE SW SE Section 19-7s-6w, had sand at 868-91 ft. and set 5-in. liner. Sturboise & Damron had machine in for No. 1 Boyd, C NE NE Section 31-7s-6w. Snell and others' No. 1 Biggerstaff, SW SW SE Section 6-7s-7w, total depth 1,061 ft., plugged back to 1,056 ft. and trying to shut off a hole full of water with 5-in. casing. Damron Brothers' No. 2 Howard, NE SE SE Section 35-7s-7w, drilling at 1,400 ft. with nothing showing.

Gibson County

In Gibson County Midwest Development Co.'s No. 2 Bryant, C NW NE Section 15-2s-9w, shot with 80 qt. at 1,350-70 ft. (Cypress sand), pumped 125 bbl. in 19 hours. Papoose Oil Co.'s No. 2 Cooper B, SE SE SW Section 12-3s-14w, total depth 2,881 ft., was plugged back and Securalloy casing drilled out at 2,490-2,505 ft. The well pumped 15 bbl. per day. Papoose Oil Co.'s No. 1 Cooper C, NE cor. SW¼ Section 18-3s-13w, was shot with 10 qt. in Cypress sand at 2,492-97 ft., and pumped 115 bbl.

A. L. Branden and others' No. 1 Simpson, NW SE NE Section 19-3s-11w, had Waltersburg sand at 1,785 ft. which showed 8 bailers of water per hour; drilling at 1,793 ft. Fotiades and others' No. 1 Fleener, SE NW SE Section 21-3s-12w, was shut down for repairs at 2,378 ft.; Cypress sand topped at 2,324 ft. showed no oil. Lacey and others' No. 2 Heston, SE cor. SW NE Section 8-3s-13w, total depth 2,816 ft., was plugged back to 2,100 ft. and shut down for orders. W. F. Lacey and others' No. 1 Dunn, SW cor. NW SE SW Section 18-3s-13w, was showing about 65 bbl. of oil per day from Waltersburg sand at 2,071-94 ft.; testing continued. Huddleston and others had rig up for No. 2 Jolly, SW cor. SE SE NW Section 18-3s-13w. Continental Oil Co.'s No. 1 Kleiderer, NW SE NW Section 26-3s-14w, was spudded. Sloss & Wall's No. 1 Oakland City College, NE cor. NW NE SE Section 13-2s-9w, was drilling at 950 ft. Midwest Development Co.'s No. 2 Beatty, SE SE NW Section 15-2s-9w, topped Ste. Genevieve lime at 1,543 ft., was acidized with 1,000 gal. at 1,621-40 ft., bailed 11 bbl. of oil and was shut down for orders. J. W. Chamberlain's No. 1 Shawhan, Donation 121, Township 1s-10w, spudded.

In Warrick County S. R. Travis and others' No. 1 Moyer, NW SW NW Section 13-5s-9w, was running 8¼-in. casing to 1,169 ft. Menard lime was topped at 1,159 ft.

In Vanderburg County J. L. Drake's No. 1 Seib, SW cor. SE NE NW Section 23-5s10w, was drilling at 560 ft.

In Perry County Hawk, Damron and others had some tools on the ground for No. 1 Dotterweich, SE NE NW Section 8-4s-3w.

In Pike County George W. Miller was drilling at about 4,000 ft. in No. 1 Nixon, SE SW NE Section 14-3s-8w.

In Dubois County Indiana-Illinois Production Corp.'s No. 1 Schipp, NE NE SE Section 1-3s-5w, was drilling below 125 ft.

In Knox County Horton & Wiggins were drilling below 114 ft. in No. 1 Upham estate, Tract 3, Township 1s-12w.

Northern Tests

In Martin County Pioneer Drilling Co.'s No. 1 Meyer, NE NE SW Section 26-2n-4w, was drilling at 1,500 ft.; New Albany shale was topped at 1,475 ft. Norris & Gilmore's No. 1 Thorp, SW cor. Section 26-3n-4w, was spudded. Harrison Development Co.'s No. 1 Lewis, NW NW SE Section 27-5n-3w, was drilling at 300 ft.

In Jackson County Favorite Oil & Gas Co. made a location for No. 1 Shortridge, 150 ft. from south and 360 ft. from east lines of NE SW Section 27-5n-3e.

In Sullivan County Salem Oil Co.'s No. 1 Woodward, NW NW NW Section 7-8n-9w, cemented off tools at 1,700 ft., and was drilling at 1,700 ft.

In Decatur County Hoosier Public Utilities Co.'s No. 206 Schoettmer, C NE NE, was reported as a small gas well in Trenton lime at a total depth of 929 ft.

In Putnam County Stanolind Oil & Gas Co.'s No. 1 Willis, C W½ NE NW Section 15-14n-5w, was drilling at 1,000 ft.

In Vermilion County John Steele and others abandoned No. 1 S. C. Dannock, 150 ft. north of south line and 1,320 ft. from west line of Section 9-17n-10w, Devonian lime was topped at 1,289 ft., and total depth 1,509 ft.

In Randolph County Charles Godwin's No. 1 St. John, C NE NE Section 8-21n-12e, straightened the hole at 800 ft., and was drilling at 1,000 ft.

In Jay County Petroleum Development Corp.'s No. 1 Binegar, NE NE NW Section 29-24n-13e, spudded. Clarence Welch's No. 8 Brinkerhoff, NW cor. NE NE Section 21-24n-14e, drilling at 1,035 ft., the top of the Trenton lime.

In Starke County R. J. Violette made location for No. 1 Hanke, 45 ft. from south and 400 ft. from west lines of NW SE Section 18-32n-4w.

In Porter County Dail and Goodson's No. 1 Pluta, NW SE SE Section 28-37n-5w, was reported abandoned in a quicksand at a total depth of 200 ft.

In St. Joseph County Robert Allan Crude Oils and others' No. 1 Ollie Sones, NE SW SE Section 20-38n-4e, had cellar and pits dug and was scheduled for spudding in mid-January.

OHIO FIELDS

NEWARK, Ohio, Jan. 29.—Activity in the Ohio fields continued quiet during the week due to zero temperatures prevailing over the area. Six gas wells and four oil wells were completed in the fields covered by this report.

In Athens County, Lodi Township, McBill Oil Co.'s No. 1 R. O. Burson, Section 19, is a small gas well in the second Berea at 1,637 ft.

In Guernsey County, Millwood Township, Ohio Fuel Gas Co.'s No. 1 W. W. Webster, Section 15, gaged 50,000 cu. ft. of gas in the Berea at 1,698 ft.

Knox County, Harrison Township, Burch & Stattimire's No. 1 Jasper Cochran, Lot 2, second quarter, made 12 bbl. of oil naturally the first day from Berea sand at 542-45 ft.

In the Newark pool in Licking County, Newton Township, Ohio Fuel Gas Co.'s No. 2 Charles B. Wilson,

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NE cor. of fourth quarter, gaged 800,000 cu. ft. of gas from Clinton sand at 2,565-95 ft.

In Medina County, Spencer Township, Harmon Co.'s No. 1 Clayton Monosmith, Section 12, has 230,000 cu. ft. of gas per day, open flow, from the Clinton at 2,609-14 ft.

In Monroe County, Benton Township, Hanlon & Schoy's No. 6 James R. Amos, Section 23, is an oil well making 10 bbl. the first day after a shot in the first Cow Run sand at 843-59 ft.

In Muskingum County, Harrison Township, Gas Producing Co.'s No. 2 E. F. Boyce, Section 19, is a gas well good for 700,000 cu. ft. open flow from Clinton sand at 4,255-75 ft.

In Noble County, Beaver Township, Ohio Fuel Gas Co.'s No. 3 James C. Wyscarver, Section 3, gaged 670,000 cu. ft. of gas, open flow, from the Berea at 1,699 ft. In Jackson Township, Skinner Co.'s No. 3 Peter Brown, Section 3, makes 1 bbl. of oil and some gas from the Berea at 1,673-76 ft. In Stock Township, Lumbatis & Co.'s No. 1 L. A. Booth, Section 30, found the Berea sand missing. The hole was plugged back from 1,810 to 936 ft., an oil showing in the second Salt sand was shot with 20 qt. to make a 2-bbl. producer.

WESTERN KENTUCKY

OWENSBORO, Ky., Jan. 29.—Only six wells were completed in the western Kentucky fields in the past week, and little new work was reported. Four of the new wells were oil producers and two were dry holes. Following is the week's record:

Daviess County, Handyville district: Master Oil Co.'s No. 1 W. W. Davis drilled deeper from 1,228 ft. through McClosky; plugged back and shot in Bethel sand at 1,594-1,670 ft.; estimated 50-bbl. well. Hewletts Store district: F. F. Gibson and others' No. 2 W. H. Harrison, 15-bbl. well from Jackson sand, total depth 983 ft. Utica district: Foursome Oil Co.'s No. 2 W. D. Iglehart, 125-bbl. well from Bethel sand, total depth 1,468 ft. Tombs & Smith's No. 1 Mill Lot in Utica, rigging up.

Henderson County, Corydon district: Sun Oil Co. and Kentucky Natural Gas Co.'s No. 3 Corydon unit, rigging up. Niagara district: Hunt and others' No. 2 A. W. Griffin, 10-bbl. well from Niagara sand, total depth 697 ft. Chester Oil Co. and others' No. 4 Mrs. Eula Jones, dry hole through Niagara lime, total depth 663 ft.

Muhlenberg County, Belton district: Walter Hagan's No. 1 Drake, supdding in.

Ohio County, Taffy district, E. DeHart and others' No. 6 M. S. Bartlett, dry hole through Jett sand. DeHart and others' No. 1 R. H. Baird, moving in.

EASTERN KENTUCKY

ASHLAND, Ky., Jan. 29.—Subzero temperatures, ice and snow have held up operations in eastern Kentucky. Icy roads have hampered field men, especially in the hills, and reports were not received from some districts.

In Floyd County Kentucky-West Virginia Gas Co. had reached the 2,141-ft. mark, in Big lime, in No. 5259 on the John W. Taylor land on Toler Creek. The same company is drilling below 1,515 ft., in slate, in No. 5261 on the J. P. Sturgill tract on Toler Creek.

In Martin County Kentucky-West Virginia Gas Co. is plugging back to Big lime after going to 2,880 ft. in No. 581 on the Wilson Short land on Rockcastle.

In Knott County Kentucky-West Virginia Gas Co. was drilling at 459 ft., in slate, in No. 582 B. F. King land on Joe King Branch. Inland Gas Corp. is idle at No. 212 W. H. Smith land on the Right Fork of Troublesome Creek.

In Lawrence County Big Blaine Oil & Gas Co. is down 900 ft. in No. 14 on the W. M. Savage land in the Busseyville-Fallsburg district.

Oil Found in New Guinea Not Yet Commercial

Oil has been found in Netherland New Guinea, the American trade commissioner at Batavia has reported to the Department of Commerce. Drilling operations in the Vogelkop have shown oil at about 1,600 ft., but commercial production is not yet proven. The greater part of the strata shows water, but it is believed deeper drilling will find oil.

The second deep drilling at Sele has not indicated the presence of oil, but drilling continues. Oil has been found at comparatively shallow depths in localities west of the Vogelkop. Drilling operations are to be started soon on the Radjo block concession in South Sumatra.

Southwest Texas District

By F. L. SINGLETON

New Pays Found in 2 Fields; Several Wildcats Showing Oil

CORPUS CHRISTI, Tex., Jan. 29.—While freezing weather extending as far south as the Rio Grande Valley district slowed down development in the Southwest Texas area, production from new sands were opened in the East White Point and Richard King fields, and several wildcats were showing for probable pool openers.

The potentiality of the East White Point field, San Patricio County, was enlarged by the completion of Houston Oil Co.'s No. 7 Baldwin, completed in a new sand at 4,930-36 ft., for an initial production of 130 bbl. of 26.8-gravity oil daily flowing through a ⅛-in. choke. Casing pressure was 1,550 lb. and tubing pressure 1,000 lb. The well is in Lot 6, Section 46, on the northwest side of the field, about ½ mile from the old White Point gas field. The sand section is believed to be the Heterostegina zone which is logged in the field proper as a gas sand at approximately 4,800 ft. No. 7 Baldwin was plugged back and completed at the present depth after salt water was tested in the regular 5,600-ft. sand.

In the Richard King field, Nueces County, Southern Minerals Corp. extended production about 1 mile south and opened production from a new horizon as casing was cemented on bottom in No. 14-B King at 5,661 ft. Sand showing oil was cored from 5,653-59 ft., and on a 20-minute drill-stem test, 450 ft. of pipe-line oil was recovered, and working pressure built up to 40 lb. A previous test at 5,628-41 ft. showed 400 lb. of working pressure and 30 ft. of distillate-cut drilling mud.

In Refugio County, casing was to be cemented preparatory to testing C. L. Norsworthy's No. 1 B. J. Fox, a wildcat in the James Fagan Survey, 5 miles southeast of Inari. The hole is bottomed at 6,715 ft., and sidewall cores showed favorable indications at intervals from 4,752 to 6,021 ft. A drill-stem test made several weeks ago at 4,730-35 ft. recovered 360 ft. of oily mud, 560 ft. of salt water and 100 lb. working pressure. No drill-stem tests were made of showings logged at 5,400 ft., 5,600 ft., 5,800 ft., and 5,900 ft.

Two wildcats in Victoria County were attracting attention as sidewall cores and electrical surveys showed possible production. Three miles southeast of the East Telferner field John Mayo and Thompson Drilling Co.'s No. 1 J. W. Ragsdale, drilled sand at 4,510-18 ft., and the section was cored from 4,518-23 ft. One foot of soft sand and 2 ft. of hard sand showing oil was recovered. After coring to 4,525 ft. the operators attempted two drill-stem tests, but the seat of the testing tool slipped and both tests were failures. The operators plan to core several feet deeper and make another test. Southeast of Victoria, in the Diego Garcia Survey, Renwar Oil Corp.'s No. 1 Gus Bayer is bottomed at 6,485 ft. and casing may be cemented to test sand at 5,700-5,800 ft., logged by sidewall cores as having an odor of oil.

In the Victoria field George Greer and Trinity Drillers, Inc.'s No. 1 Rosie King was completed as a gas well in sand at 2,544-53 ft. The hole is bottomed at 2,571 ft. This well is 1,000 ft. northwest of Trinity Drillers, Inc.'s No. 1 Moeller, recently completed as a small producer in the same sand.

Atlantic Refining Co.'s No. 1 Conwell, a projected Tertiary Wilcox test in DeWitt County, is being watched with interest as sand and shaly sand having an oil and gas odor were found at intervals from 4,853 to 4,906 ft. The hole is bottomed at 5,290 ft. and the company may make a drill-stem test of the section before drilling ahead. Location is in the Charles Lockhart Survey.

The Bird Island field, located in Laguna Madre Bay offshore from Kleberg County, was extended ½ mile as Pure Oil Co.'s No. 1-169 State tested gas and distillate through perforated casing at 7,296-98 ft. The perforations have been squeezed off and the well is being retested. Total depth of the hole is 7,572 ft., with 5½-in. casing cemented at 7,500 ft.

Locations for two more wildcats were made along the Frio-Vicksburg trend in Jim Wells County. Arkansas Fuel Oil Co. staked location for No. 1 Brand, a projected 5,500-ft. test, 1½ miles north of Orange Grove in the J. Poitevent Survey 4. Reese, Dunn, and others' have derrick up for No. 1 G. M. de Perez in La Tinaja de Lara grant.

In Duval County and midway between the Sweden and Benavides field, Hiawatha Oil & Gas Co. was scheduled to test No. 1-A Herberger. Casing was cemented to test at 5,852-73 ft., where two drill-stem tests the previous week recovered several feet of distillate and several hundred pounds of working pressure.

In the west half of the county and located in the newly opened Tarancahuas field, Plymouth Oil Co. is coring for sand in No. 1-C Hoffman, southwest of the discovery well in the B.S.&F. Survey. Cox, Hamon, and others' No. 1 Hoffman, was completed in sand at 2,025-33 ft., for an initial production of 10 bbl. per hour.

Approximately 1½ miles south of the O'Hern field, Webb County, O. W. Killam's No. 64 Bruni, M. H. Rodriquez Survey, looms as a probable pool opener as the well is reported to be showing gas and an unestimated amount of oil while testing through perforated casing at 1,802-06 ft. Sand showing oil was logged at 1,804-11 ft., and 5½-in. casing was cemented at 1,830 ft. A previous test at 1,796-1,802 ft. tested gas, with a slight show of oil and some salt water through a ⅜-in. choke. Casing pressure built up to 400 lb.

In the Kelsey field Humble Oil & Refining Co. extended production in the Starr County side of the field with the completion of No. 45 McGill. The well was drilled to a total depth of 4,734 ft. and was completed in sand topped at 4,722 ft. Initial production was 151 bbl. daily, flowing through a 9/64-in. choke. Royal Oil & Gas Co. spudded No. 1 Juarea, an interesting outpost located in Share 9, McBride subdivision of the Santa Teresa grant. The location is northwest of Sun Oil Co.'s No. 1 Rodriguez, which is drilling below 5,030 ft., after testing salt water and 3 lb. of working pressure on a drill-stem test at 5,013-27 ft.

Standard Oil Co. of Texas let contract for a second well to be drilled in the Sejita field, Duval County. The location is on the A. B. Rodriguez lease, northwest of the discovery well in the Pedro de Charco Redondo grant.

Production tests on two probable pool openers in the Balcones fault-line district proved disappointing. In Atascosa County, 1 mile west of the town of Anchorage, Red Bank Oil Co. and Casray Oil Corp.'s No. 1 J. P. Pratt is shut down after swabbing wash water with a rainbow show of oil. The hole is bottomed at 2,386 ft., and 7-in. casing was cemented at 2,347 ft. Sand and sandy shale showing oil was logged the previous week at intervals from 2,347-86 ft. Location is in the Francisco de la Garza Survey.

In Guadalupe County, A. J. Hollifield's No. 1 D. M. Day, James Hinds Survey, swabbed sulfur water with a slight show of oil at 2,357-2,837 ft., and the hole has been plugged back to 2,415 ft. Southeast of Seguin, Wellington Oil Co. of Delaware's No. 1 J. B. Wells, topped the Edwards lime at 2,764 ft., and the hole was abandoned after coring to a total depth of 3,787 ft.

SOUTHWEST TEXAS COMPLETIONS IN PROVEN FIELDS

Calhoun-Victoria Counties

Heyser field: Magnolia Petroleum Co.'s No. 14 Lander, sand at 5,491-96 ft., 112 bbl., 9/64-in. choke.

Duval County

Cedro Hill field: Magnolia Petroleum Co.'s No. 1 Duval County Ranch Co. perforated casing 1,446-53 ft., gas well. Hoffman field: Duval Oil Corp.'s No. 13 Hoffman, sand 2,837-63 ft., 45 bbl., pumping. Magnolia Petroleum Co.'s No. 6 Well, 3,072 ft., dry and abandoned. Longhorn field: M. M. Miller's No. 18 fee, perforated casing 4,058-64 ft., 100 bbl., ¼-in. choke. Peters field: G. G. Mortimer's No. 3-B Peters, perforated casing 2,450-63 ft., 10 bbl., per hour, jetting. Tarancahuas field: Cox, Hamon, and others' No. 1 Hoffman, sand 2,024-33 ft., 70 bbl., 15 hours, jetting.

Frio County

Pearsall field: Texas Atlas Petroleum Co.'s No. 1 Cory and McWilliams, 5,610 ft., 912 bbl., 1-in. choke.

Jim Hogg County

Colorado field: Colorado Octane Co.'s No. 1-C Trevino, sand 3,050-68 ft., 60 bbl., ⅛-in. choke. Great States Oil Co.'s No. 2 Trevino, sand 3,029-42½ ft., 160 bbl., ⅛-in. choke.

Jim Wells County

Ben Bolt field: Republic Natural Gas Co.'s No. 1 R. V. Garcia, perforated casing 5,277½-79½ ft., 142 bbl., 5/32-in. choke. Premont field: H. H. Howell and others' No. 1 Bell, perforated casing 2,350-52 ft., 10 bbl. oil, 90 per cent water, jetting.

Nueces County

Minnie Bock field: Windsor Oil Co.'s No. 1 Howze, perforated casing 3,811-15 ft., 78 bbl., ⅛-in. choke.

Refugio County

La Rosa field: Coronado Corp.'s No. 18 Rooke, perforated casing 6,340-41 ft., 168 bbl., ⅛-in. choke. Hewitt & Dougherty's No. 2 Posert, 5,763 ft., 140 bbl., ⅛-in. choke. Refugio field: Houston Oil Co.'s No. 24 Heard, perforated casing 4,926-29 ft., 289 bbl. oil, plus 37 per cent salt water, ⅛-in. choke. Tomoconnor field: Windsor Oil Co.'s No. 2 Powers, perforated casing 5,909-15 ft., 138 bbl., 7/64-in. choke.

San Patricio County

East White Point field: Plymouth Oil Co.'s No. 9 Solar-Ficke, perforated casing 5,626-36 ft., 125 bbl., 9/64-in. choke. Plymouth Oil Co.'s No. 5 Ficke, perforated casing 5,620-24 ft., 114 bbl., 7/64-in. choke.

Sinclair Prairie Oil Co.'s No. 2-X State, perforated casing 5,652-56 ft., 106 bbl., ⅛-in. choke. Plymouth field: Plymouth Oil Co.'s No. 117-C Welder, 5,905 ft., dry and abandoned.

Starr County

Kelsey field: Humble Oil & Refining Co.'s No. 43 McGill, 4,734 ft., 119 bbl., 7/64-in. choke. Humble Oil & Refining Co.'s No. 44 McGill, 4,729 ft., 192 bbl., 7/64-in. choke. Ricaby field: H. L. Bass and others' No. 2 Hinojosa, 1,772 ft., dry and abandoned. South Ricaby field: Baldridge & Vessels' No. 1 Martinez, sand 1,771-88 ft., 31 bbl. oil, 2 bbl. salt water, jetting. Rincon field: Davis & Co.'s No. 7-B Slick, perforated casing 4,135-45 ft., 240 bbl., ¼-in. choke.

Webb County

Adami field: Arkansas Fuel Oil Co.'s No. 4-A Adami, 995 ft., 46 bbl., pumping. Arkansas Fuel Oil Co.'s No. 5-A Adami, sand 987-89 ft., 46 bbl., pumping. Arkansas Fuel Oil Co.'s No. 1-B Adami, sand 997-1,001 ft., 51

(Continued on Page 56)

West, Central and Panhandle Texas

By
D. H. STORMONT

Deep Sand Production South of Apco Pool, Pecos County

MIDLAND, Tex., Jan. 29.—The definite opening of flush Ordovician production in a wildcat more than 2 miles south of Pecos County's Apco pool featured a busy week in the West Texas district. Due to lack of geological information, operators in the deep area hesitated to state whether the new well indicates an extension to the Ordovician producing Apco pool or opens an entirely new deep field.

Other top news from the district included the completion of another well between North Cowden and Foster in central Ector County, the staking of several wildcats and field outposts, and indications of production in wildcats in both Mitchell and Stonewall counties.

Field activity held about steady during the past week, there being a total of 56 locations staked for the entire district and 29 completions during the week for an aggregate initial production of 41,103 bbl. daily. New wildcat locations were made in Hockley and Lynn counties and field extensions were staked to the Slaughter, Foster and North Cowden fields.

In northern Pecos County and more than 2 miles south of the Apco pool which was opened to production last year from the Ellenburger of Lower Ordovician, Olson Drilling Co. and Bryce McCandless' No. 1 Virginia W. Crockett, approximate center of Section 5, Block 110, T.C. Survey, came in for a flush producer of about 100 bbl. per hour. Having been shut in preparatory to an official gage since early in the week, the well made its best flow when 531 bbl. of 43.8-gravity oil was tanked in 5 hours. The flow was through 1¼-in. choke on tubing with packer set at 4,484 ft. Hole is bottomed at 4,518 ft. It had been acidized with 1,000 gal.

Geologically, little is yet known of the structure on which this new producer, and even the Apco field, is located. Some are of the opinion that there is a general syncline between two highs with the Ellenburger pinching out on the north edge of the Apco field high. Others believe several small local faults exist between the two areas and production will be extremely spotted. The fact that the Permian lime lies unconformably on the Ellenburger was established at two dry holes drilled on the northern edge of the Apco field.

Ector County Pool Extended

Extending the northern limits of the Johnson area between the Foster and the North Cowden pools of central Ector County another ½ mile north, Indian Territory Illuminating Oil Co.'s No. 1-F Johnson is heading an estimated 170 bbl. of oil daily while drilling below 4,150 ft. The well is little more than a mile from the southern edge of the North Cowden field, being in the SE cor. NW Section 34, Block 43, T-1-S, T.&P. Survey. It began heading oil at 4,107 ft. and found steady increases to its present depth.

A 1-mile east extension to the Foster pool will be sought by an outpost staked by York & Harper and M.B.K. Drilling Co. as their No. 1 J. M. Gist, 330 ft. from the south and west lines of Section 3, Block 42, T-2-S, T.&P. Survey.

West of the Foster pool and in the center of Ector County, Landreth Production Corp. and Shell Oil Co., Inc., have shut down their No. 1-A Johnson, wildcat in Section 43, Block 43, T-1-S, T.&P. Survey, pending deepening to the Holt pay found in the northern part of the North Cowden field. On three tests of 24 hours each, on consecutive days, the production in the wildcat fell from 12½ bbl. of oil and 12½ bbl. of water daily to 22½ bbl. of water and 2½ bbl. of oil daily. Operations have been suspended at 4,502 ft., total depth.

Two miles north of the Tubb area in western Crane County Gulf Oil Corp.'s No. 12 Waddell, Section 30, Block 26-B, P.S.L. Survey, was last reported reaming to bottom from 3,170 to 3,670 ft. Either opening a pool or providing a major extension to the Tubb field, the test was spraying an estimated 5,790,000 ft. of gas and about 10 bbl. of oil daily. The producing horizon from 3,635 to 3,640 ft. has been correlated with the deep Holt pay found in the North Cowden field of Ector County.

Extending the Bashara area, which itself is a north extension to the Keystone pool in Winkler County, a mile farther to the north, Bowden & Lochausen's No. 1 Lovett, Section 17, Block 3-B, P.S.L. Survey, was testing after a shot in the pay at total depth of 3,240 ft. Before being shot the well had headed an estimated 25 bbl. daily to assure production.

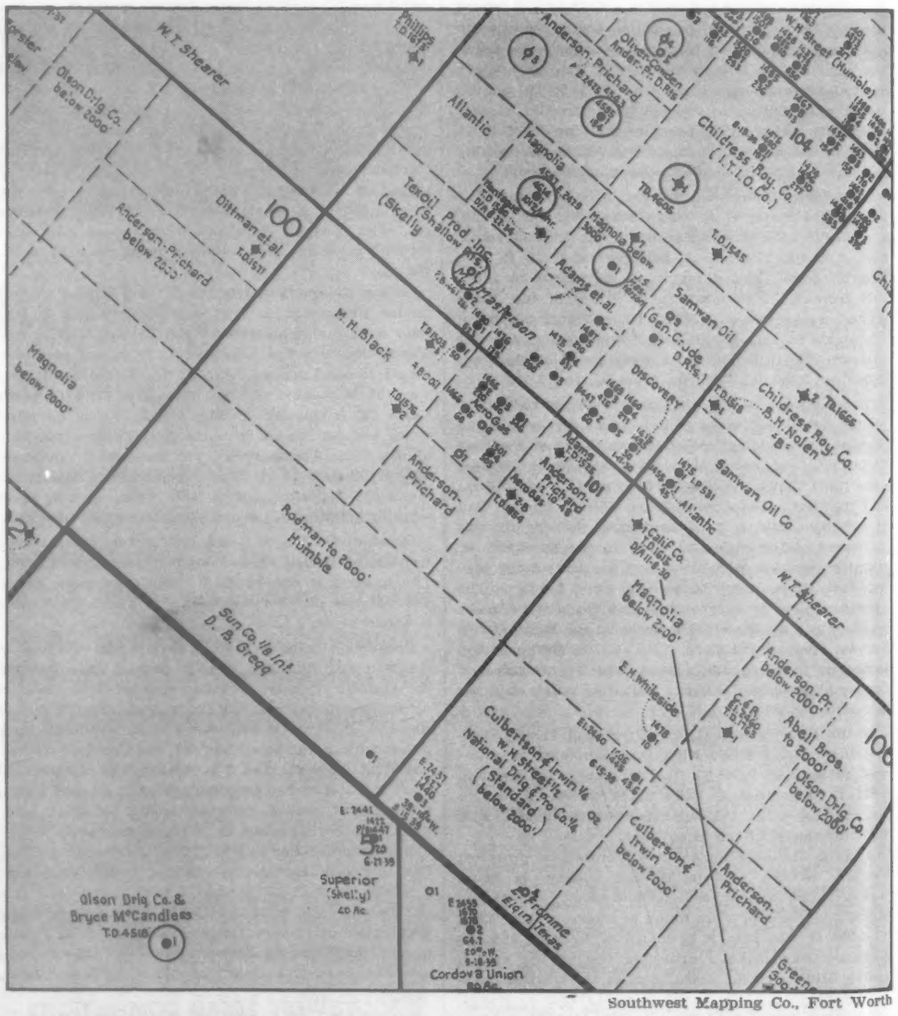
In Stonewall County the second show of oil in as many weeks was found in Shell Oil Co.'s No. 1 T. K. Smith, wildcat test in the southern part of the county, in Section 143, Block 1, H.&T.C. Survey. The new showing was found at 5,180-85 ft. The first showing was found last week at 4,395-97 ft. It is contracted to 6,000 ft. and was last reported drilling ahead below 5,200 ft. The wildcat topped the Wichita-Albany at 1,328 ft., Valera anhydrite at 1,890 ft., Cisco series at 2,541 ft., and Canyon series at 3,624 ft. The Noodle Creek lime of the Cisco series was topped at 2,819 ft.

Mitchell County's three wildcats were drilling ahead as the week closed after a show of oil had been found in one of the tests. Sinclair Prairie Oil Co.'s No. 1 E. E. Erwin, in the extreme northwestern part of the county and located in Section 1, Block 35, H.&T.C. Survey, reported a slight show of oil and gas at 2,673 ft. It was last reported drilling ahead below 2,853 ft.

North Basin Area

Closely following the staking of three north outpost tests to the Slaughter pool of Hockley County, Helmerich & Payne and Denver Producing & Refining Co. have staked a new wildcat on recently acquired acreage about 15 miles north of the Slaughter pool. The test will be No. 1 Whiteface Farms, C SW¼ Block 22, League 77, Abstract 199, Reeves County School Lands. It is on a block of 3,350 acres assembled in the west central part of the county and about 7 miles northwest of Levelland.

South of production in the Slaughter pool, George P. Livermore has given his No. 1 R. D. Glimp, extending the pool about a mile to the south, a third acid treatment with 5,500 gal. This makes a total of 9,000 gal. of acid



Southwest Mapping Co., Fort Worth

The Apco (Ellenburger of Lower Ordovician) pool of Pecos County has either been extended 2 miles to the south or a deep Ordovician area has been discovered by Olson Drilling Co. and Bryce McCandless' No. 1 Crockett which is awaiting official gage after coming in for a flush producer at more than 100 bbl. of oil hourly

injected into the pay section at 4,973-5,030 ft. Following the latest treatment the well flowed 143 bbl. of oil in 5 hours through open tubing. Location is in Section 8, Block X, P.S.L. Survey. It has provided a major south extension for the field.

In Lynn County, in the extreme northern basin area, H. F. Wilcox Oil & Gas Co. has staked location for No. 1 E. L. Powell, 990 ft. from the south and 330 ft. from the west lines of Section 134, Block 12, E.L. Survey. It is about 15 miles southeast of Tohoka. It is contracted to 5,200 ft.

As the week closed, production was again indicated at Continental Oil Co.'s deep Ordovician wildcat in Crockett County. It is No. 1 Todd, Section 30, Block W.X., G.C. &S.F. Survey, 15 miles northwest of Ozona. The test was reported making 2 to 3 bbl. of light colored oil with each trip of the swab. It is the first major showing found in the well which is now bottomed at a plugged-back depth of 6,336 ft. from 7,010 ft., where sulfur water was struck.

WEST TEXAS COMPLETIONS

(24-hour gages)

Andrews County

In the Means field, Humble Oil & Refining Co.'s No. 73 J. S. Means, 4,460-4,510 ft., 1,154 bbl.

Brewster County

A wildcat, H. D. Wilcox Oil & Gas Co.'s No. 1 Kokernot, abandoned at 2,328 ft.

Concho County

A wildcat, J. W. Westbrook's No. 1 Jim Rice, dry and abandoned at 1,203 ft.

Crane County

In the Tubbs field, Gulf Oil Corp.'s No. 20 Henderson, 3,500-09 ft., 11,784 bbl. In the Church-Fields field, Kewanee Oil Co.'s No. 4-B University, 3,450-3,640 ft., 1,531 bbl. In the McElroy field, Gulf Oil Corp.'s No. 208 McElroy, 2,740-2,928 ft., 1,146 bbl.

Crockett County

In the Todd area, Stanolind Oil & Gas Co.'s (formerly Continental) No. 4-A Todd, 1,219-25 ft., 68 bbl.

Ector County

In the Foster field, Atlantic Refining Co.'s No. 6 Henderson, 3,980-4,200 ft., 1,474 bbl. M. B. K. Drilling Co.'s No. 2-C J. M. Gist, 4,163-4,322 ft., 1,009 bbl. Midland Drilling Co.'s No. 3 Henderson, 4,037-4,290 ft., 1,888 bbl. Stanolind Oil & Gas Co.'s No. 31 Witcher, 3,970-4,195 ft., 2,085 bbl. Stanolind Oil & Gas Co.'s No. 39-B E. F. Cowden, 4,065-4,240 ft., 1,126 bbl.

In the Goldsmith field, Eastland Oil Co.'s No. 4 Cummins, 4,167-4,200 ft., 839 bbl. Phillips-Pure's No. 66 C. Cowden, 4,129-68 ft., 3,902 bbl. Phillips-Pure's No. 67 C. Cowden, 4,125-64 ft., 3,999 bbl. Phillips-Pure's No. 68 C. Cowden, 4,142-84 ft., 487 bbl. Phillips-Pure's No. 69 C. Cowden, 4,142-79 ft., 1,124 bbl.

In the Jordan field, Snowden & McSweeney's No. 1 University, 3,528-80 ft., 1,024 bbl.

Gaines County

In the Wasson field, Continental Oil Co.'s No. 3-43 Langdon, 4,885-5,044 ft., 480 bbl.

Hockley County

In the Slaughter pool, Awoeb Oil Co.'s No. 1 Davis, 4,755-4,985 ft., 772 bbl. Honolulu Oil Corp.'s No. 2-4-52 Mallett, 5,000-50 ft., 814 bbl. Stanolind Oil & Gas Co.'s No. 6-A A. A. Slaughter, 4,950-5,040 ft., 1,079 bbl. Stanolind Oil & Gas Co.'s No. 6-B A. A. Slaughter, 4,942-5,020 ft., 889 bbl.

Lynn County

A wildcat, John L. Baldridge's No. 1 Alma Lumber Co., dry and abandoned at total depth of 4,450 ft. after topping the San Andreas lime at 4,170 ft.

Presidio County

A wildcat, Marfa Oil Co.'s No. 1 Fisher, abandoned location.

Pecos County

In the White & Baker field, Cardinal Oil Co.'s No. 5-B-45 White & Baker, 1,712-43 ft., 72 bbl.

In the Masterson pool, E. G. Rodman's No. 1 D. B. Gregg, 1,427-39 ft., 10 bbl. of oil and 35 bbl. of water.

In the Payton field, Stanfield & Walker's No. 1 Alva Reed, 1,662-75 ft., 20 bbl.

Reeves County

A wildcat, Pacific and Mid-Continent Oil Corp.'s No. 1 W. A. Tunstill, deepened from 3,305 to 3,556 ft. and found no increase; plugged back to original level for 3,770,000 cu. ft. gas.

Upton County

In the McCamey field, Garrett Smith's (formerly Sedwick & Callahan) No. 1 Burleson, deepened to 2,236 ft., 38 bbl. (old well drilled deeper).

Winkler County

In the Halley field, Skelly Oil Co.'s No. 36 Halley, 2,690-2,810 ft., 65 bbl.

Yoakum County

In the Wasson field, Anderson-Prichard Oil Corp.'s No. 2-761 Willard, temporarily abandoned location. Basin States Oil Corp.'s No. 1 M. W. Jordan, 5,008-5,210 ft., 508 bbl. Don Danvers' No. 2 W. and B. Anderson, 5,038-5,230 ft., 593 bbl. Magnolia Petroleum Co.'s No. 12 Kendrick, 5,035-5,120 ft., 508 bbl. Magnolia Petroleum Co.'s No. 6 Mahoney, 5,035-5,210 ft., 628 bbl.

WEST CENTRAL TEXAS

FORT WORTH, Tex., Jan. 29.—The staking of new deep wildcat tests in both Stephens and Shackelford counties, together with outpost locations and indicated extension producers for the Stribling pool in Stephens County, drew attention in the West Central Texas district during the week.

Panhandle Producing & Refining Co., of Wichita Falls, has staked a 4,200-ft. wildcat 5 miles southeast of Ivan in Stephens County. It is contracted to the Bend series and will be known as No. 1 Frank Magers, center of the southwest 40 acres of E½ Section 1, Block 3, S.P. Sur-

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Your records will show how well pleased I am by referring to my order dated January 3rd, 1938, when I purchased 13 miles additional of the same grade of material for delivery over to Bristol, Virginia.

So long as you can deliver this kind of material, I shall have no hesitation in using it when the opportunity presents itself.

Yours very truly,

(SIGNATURE)

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vey. Rathke Drilling Co., which has the contract, is preparing to move in material.

The Stribling pool in Stephens County is scheduled for considerable development during the coming months as new locations and outpost producers are recorded almost weekly. Three-quarters of a mile north of the field, Steadman Petroleum Co.'s No. 1 W. R. Powers, SW cor. of G. G. York Survey, topped the saturation and cemented casing at 3,547 ft. East of production, Clyde Greathouse's No. 1 J. J. Robertson, NW cor. of 8½ Peter Norton Survey, has been spudded and is drilling ahead. Prospect for a 2,200-ft. west extension was seen when Grace & Woods' No. 1 Joe Beatty, W. M. Bales Survey, topped the Caddo-lime producing horizon and cemented casing at 3,614 ft. A mile-south outpost location was made during the past week when Producers Oil Co. located No. 1 Ross Sloan in a 500-acre tract in the H. Yeamans Survey 933.

Development in this field has been seriously hampered by lack of an outlet, but Horwitz & Oldom, main operators in the field, have started construction of a 9-mile 3-in. line from the pool to connect with the Texas Co.'s line northeast of the field.

First deep wildcat in Shackelford County this year will be John E. Carson's No. 1 R. A. Elliott, Bayland Orphan Home Survey, 1 mile south of the Ibex pool in the southeast part of the county. The test will be carried to 3,600 ft., and the operator's block centers around the old Hogan-Humble test drilled in 1922 and which was reported to have found 40 ft. of saturated lime topped at 3,621 ft. The new deep test is about 4 miles northwest of the three-well G. Willard Rich pool on the Stephens and Shackelford county line.

WEST CENTRAL TEXAS COMPLETIONS

(24-hour gages)

Brown County

J. C. Homer's No. 1 Hughes, J. M. Harris Survey 784, dry and abandoned at total depth of 1,402 ft.

Callahan County

Hart & Welch's No. 2 George, Section 71, B.O.A. Survey, 631-38 ft., 6 bbl.

Coleman County

Quinn, trustee's No. 1 Duty, Section 25, H.&T.C. Survey, 1,750-60 ft., 1,500,000 cu. ft. of gas.

Eastland County

Rush & Godwin's No. 1 Rush, Section 130, Block 3, H.&T.C. Survey, dry and abandoned at total depth of 423 ft.

Jones County

Danciger Oil & Refining Co.'s No. 7 Roberts, Section 37, Block 15, T.&P. Survey, 1,898-1,921 ft., 270 bbl. Fain-McGaha Oil Corp.'s No. 9 Daughtry, Section 37, Block 15, T.&P. Survey, 1,911-31 ft., 261 bbl. Pantex Oil Co.'s No. 1 Sylvester, Section 21, Block 4, H.&T.C. Survey, 3,268-74 ft., 157 bbl. Ungren & Frazier's No. 4 Steffens, Section 32, Block 15, T.&P. Survey, 1,897-1,906 ft., 280 bbl.

In the Lewis field Petroleum Producers Co.'s No. 1 McKeown, Section 36, Block 15, T.&P. Survey, 1,855-74 ft., 271 bbl. In the Griffin field Lewis Producing Co.'s No. 1 S. A. J. S. Land Bank, Section 198, B.B. B.&C. Survey, 3,232-70 ft., 364 bbl. In the Avoca field Iron Mountain Oil Co.'s No. 6 C. Olander, Section 196, B.B.B.&C. Survey, 3,210-35 ft., 3,080 bbl. Iron Mountain Oil Co.'s No. 10 Jones-Stasney & Bowden, Section 196, B.B.B.&C. Survey, 3,205-30 ft., 2,550 bbl.

Palo Pinto County

Goble-Moore Drilling Co.'s No. 3-C Costello, M. Castleman Survey, Abstract 119, 1,400-28 ft., 12 bbl. Texas Pacific Coal & Oil Co.'s No. 2-X fee, Thomas Court Survey, 2,978-88 ft., 5,760,000 cu. ft. of gas.

Runnels County

Art Tucker's No. 1 King, D. Diaz Survey 532, 2,329-64 ft., 187 bbl.

San Saba County

Lane's No. 1 McCoury, A. Dietz Survey 45, dry and abandoned at total depth 1,028 ft. after topping the Ellenburger at 615 ft.

Shackelford County

Georgian Oil Corp.'s No. 4 Black, Section 398, T.E.&L. Survey, dry and abandoned at total depth of 805 ft. J. L. Hart's No. 1 Sanders, Section 586, T.E.&L. Survey, 578-90 ft., 30,000 cu. ft. of gas. Jones and others' No. 1 Smith, Section 66, L.A.L. Survey, dry and abandoned at total depth of 600 ft. Jones-Stasney's No. 1 Wendt, Section 13, Block 3, H.&T.C. Survey, dry and abandoned at total depth of 3,306 ft. Martin & Sons' No. 7 Davis, Section 220, E.T. Survey, 1,703-07 ft., 102 bbl.

Stephens County

Hanlon Gasoline Co.'s No. 1 Vick, Section 1, B.A.L. Survey, dry and abandoned at total depth of 3,304 ft., old well drilled deeper.

Taylor County

W. J. Murray's No. 5 Joe Evans, Section 28, B.A.L. Survey, 1,737-55 ft., 100 bbl.

In the Bowles field Bradford-Robinson's No. 1 Bowles, Section 28, B.A.L. Survey, 1,722-54 ft., 331 bbl.

PANHANDLE COMPLETIONS

(24-hour gages)

Gray County

Bell Oil & Gas Co.'s No. 6 J. S. Morse, 2,488-2,568 ft., 500 bbl. Kewanee Oil Co.'s No. 2 J. S. Morse, 2,385-2,481 ft., 548 bbl. King Oil Co.'s No. 6 Simpson, 3,250 ft., total depth, 411 bbl. Magnolia Petroleum Co.'s No. 14 E. Haggard, 3,250-3,300 ft., 255 bbl. Magnolia Petroleum Co.'s No. 15 E. Haggard, 3,230-3,300 ft., 220 bbl. Ryan Consolidated Oil Co.'s No. 3 C. S. Barrett, 3,282-95 ft., 453 bbl. Skelly Oil Co.'s No. 103 Schafer ranch, 3,210-91 ft., 373 bbl. Carl M. Smith's No. 1 J. M. Gorenflo B, 2,485-2,587 ft., 116,000,000 cu. ft. of gas. Stanolind Oil & Gas Co.'s No. 7 Hood, 2,965-3,000 ft., 308 bbl. Stanolind Oil & Gas Co.'s No. 2 Sackett, temporarily abandoned location. Stanolind Oil & Gas Co.'s No. 7 Saunders, 2,945-3,111 ft., 371 bbl.

Hutchinson County

Mid-States Oil Corp.'s No. 30 Whittenburg A, 2,731-90 ft., 428 bbl.

Wheeler County

Skelly Oil Co.'s No. 16 Derrick, 2,415-48 ft., 213 bbl.

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North and East Texas

By D. H. STORMONT

Wildcats Following Definite Trend in North Texas Area

WICHITA FALLS, Tex., Jan. 29.—Wildcat activity which is following definite deep trends throughout the area featured the week's development in the North Texas district during the week past. Two areas are receiving the majority of the activity. One surrounds Shell Oil Co., Inc.'s recent pool opener in southwestern Clay County and the other is the northeast extension area to the Hull-Silk pool in northern Archer County. Both spots have been given several new wildcat tests during the past 2 weeks.

Two new wildcats have been staked in the 3,600-ft. area discovered by Shell in the extreme southwestern corner of Clay County, both by L. T. (Bobby) Burns of Wichita Falls. Both tests are on acreage originally included in Shell's discovery well block, Burns having farmed out both tracts. First test to be drilled is the No. 1 J. G. McMullens, contracted to 3,600 ft. and located 330 ft. from the south and east lines of the N½ of Section 2617, T.E.&L. Survey. The outpost is approximately ½ mile north and west of Shell's discovery well on the Henderson tract in the center of the N½ of the W⅝ Section 2605.

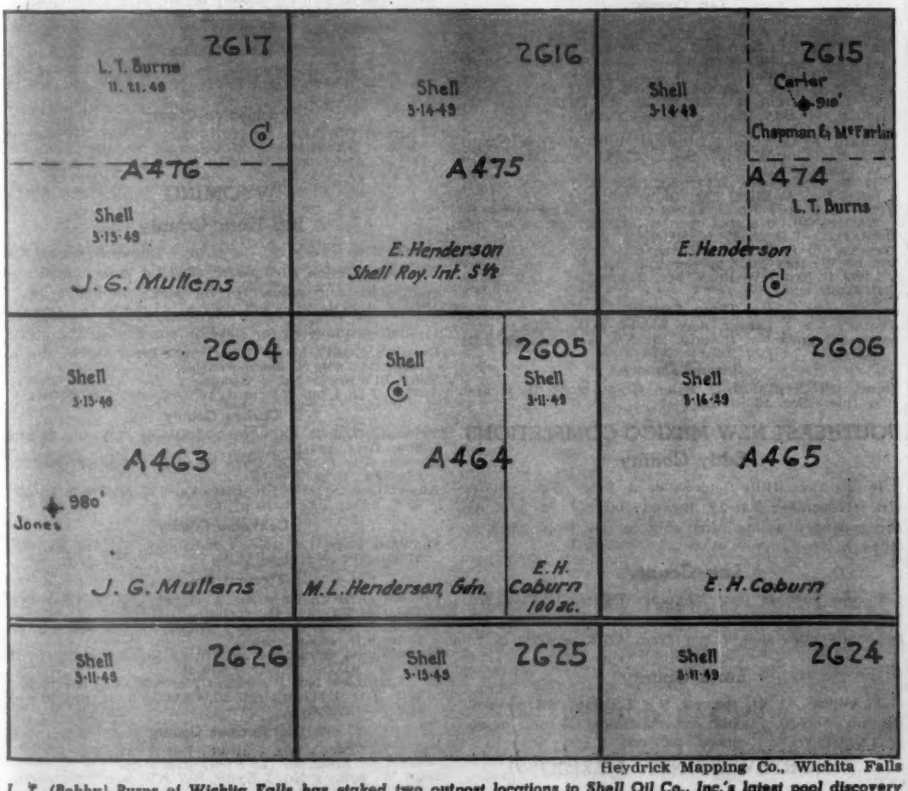
Burns' second wildcat is No. 1 Henderson, 330 ft. from the south and west lines of E½ Section 2615, approximately ⅝ mile northeast of the discovery well. Burns is reported to have paid $100 cash and $50 out of oil per acre for the drilling tract of this second test.

Meanwhile Shell continued to test at its No. 1 Henderson. The well has been plugged back from 3,578 to 3,548 ft., however, some water is still showing with the oil. It is swabbing about 24 bbl. of oil and 24 bbl. of water hourly.

Further adding to the development surrounding this new area, Burns has acquired a 1,688-acre drilling block just south of Shell's discovery and in extreme northwestern Jack County. The operator plans to drill a 3,600-ft. test during the coming months. The block is north and west of the Antelope townsite and extends north to the county line. The northern line of Burns' new block is little more than 1½ miles south of the south edge of Shell's discovery block in southwestern Clay County. The block centers in the J. Robbins Survey, R. Parker Survey, M. Rockefellow Survey, and the E. Smith Survey.

Hull-Silk Area

Another area in North Texas receiving considerable wildcat play is the northeastern corner of Archer and the southeastern corner of Wichita counties. Leading the development 2 weeks ago Continental Oil Co. started drilling No. 1-A Wilson, Section 20, H.&T.C. Survey, 1½ miles east and slightly south of the Sikes sector of the Hull-Silk pool. As the week closed two additional wildcats were staked in the area, one further northeast and in extreme northeastern Archer County and the other northeast of this and in the southeastern part of Wichita County. C. B. Christie and associates and Phillips Petroleum Co. were preparing to spud their No. 1 H. H. Taylor, a 5,100-ft. wildcat test located 330 ft. from the east and 660 ft. from the north lines of a 260-acre lease in the southwest corner of the H. Cox Survey, Abstract 67, 3 miles northeast of Continental's wildcat. The wildcat is about 2 miles southwest of the small production opened on the State Asylum Lands in southeastern Wichita County early in 1939.



Heydrick Mapping Co., Wichita Falls

L. T. (Bobby) Burns of Wichita Falls has staked two outpost locations to Shell Oil Co., Inc.'s latest pool discovery in extreme southwestern Clay County

Extending the play almost to the city limits of Wichita Falls, E. C. Harlin, Jr., of that city, has made a location for a Caddo-lime test to be drilled 330 ft. from the south and east lines of Block 28, Denton County School Lands, League 1, only ¾ mile from the Lakeview addition of Wichita Falls. This wildcat is northeast of both of the tests in northeastern Archer County and outlines a definite trend play from Hull-Silk northeastward to the Wichita Falls area.

The central part of Archer County will be given an Ellenburger-lime wildcat, Petroleum Producers' No. 1 D. L. Wolf, 330 ft. south and east of the northwest corner of the J. Poitevent Survey, Abstract 348, 10 miles north of Olney. It is contracted to 5,200 ft.

Operators in the Hull-Silk and Sikes pools requested before the Railroad Commission of Texas last week that the pools be treated as one proration unit. No protest was made against the proposal and the commission is expected to grant the request. No dry holes have been drilled between the two pools; they are on the same structure and both produce the same gravity oil from approximately the same level.

Scattered Wildcats

Prospects of a new pool in Baylor County were seen when Staton & Bunch's No. 1 Robertson County School Lands, Staton subdivision, 8 miles east of Seymour, drilled lime with oil showings from 2,996 to 3,050 ft. The section showed water with oil on an electrical survey and the test was last reported shut down waiting orders to test or drill deeper.

New wildcat was in prospect for Foard County when Domain Oil Co. announced intentions to drill on a 5,000-acre block assembled out of the Worsham and Wishon ranches, 11 miles southwest of Crowell. No location has yet been made, however, a 4,500-ft. test is planned by the company.

Hardeman County registered a new wildcat when Norris & Gilbert spudded No. 1 Robert Weekley, Section 85, Block 16, H.&T.C. Survey, northeast part of the county. Operators will seek the 3,960-ft. sand found in a wildcat drilled 4 miles to the southeast and in Wilbarger County.

Young County was given a new 4,000-ft. cable-tool wildcat test by F. T. Conner as his No. 1 Wright McClatchey, 660 ft. from the south and west lines of Section 284, T.E.&L. Survey, northern part of the county.

A west-edge outpost to the Rogers pool, at the edge of Nocona in north central Montague County, was getting under way as the week closed. This test is the Stanolind Oil & Gas Co.'s No. 1 R. T. McCool in the Jacob Lenow Survey, staked about ½ mile west of the field. On Saturday rotary was being moved in.

EASTERN TEXAS

DALLAS, Tex., Jan. 29.—The East Texas field led the development in eastern Texas during the week past as six completions were recorded and eight locations were made. This is slightly under last week's figures; however, it is well above the last few weeks of 1939. Activity throughout the East Central Texas district was low with only one completion listed and only three locations listed, one being in the Long Lake field and two in Talco. The single completion was in Houston County's Navarro Crossing field.

An increase in drilling and exploratory activity is predicted for East Central Texas as several large drilling blocks, assembled late last year, were being made ready for exploratory tests. A 5,000-acre block in Wood County, called the Hawkins block, is expected to receive a deep test within 3 months.

Plans for a deep well on the north side of the fault structure in the Talco field of Franklin and Titus coun-

(Continued on Page 65)

Rocky Mountain Area

By
T. R. INGRAM

Wyoming Crews Do Not Quit Because It Is 30 Below Zero

DENVER, Colo., Jan. 29.—Subzero weather throughout the Rocky Mountain area, with thermometers at Lance Creek and other places registering 30 below, isolated many wildcats and slowed down drilling in all areas.

Wyoming had three completions. The Mule Creek Oil Co.'s No. 1 Binney-Sessions, in the Garland field, was deepened 50 ft. and recompleted for 300 bbl. per day. The Continental Oil Co.'s No. 6 Joss, in Lance Creek, was completed in the Leo sand for 600 bbl. per day. The Marvel Oil Co.'s No. 1, in the La Barge field, made 8 bbl. per day on the pump.

Montana had one completion in A. Beardlee's No. 12 Swears, in Kevin-Sunburst for 45 bbl. per day.

One well was abandoned in Colorado at a shallow depth.

New operations included seven in Lance Creek, two in Cut Bank, and one in Kevin-Sunburst.

NEW MEXICO

A decided drop in field activity was noted in the southeastern New Mexico district in the past week, there having been only one completion each recorded for Eddy and Lea counties and one wildcat abandonment in Luna County. New locations for the district continued about level with four reported for Eddy County and two for Lea. One of Eddy County's locations was the previously announced wildcat in the south central part of the county and slightly north of the Black River area. Two locations were made in the Loco Hills field and one each in the Artesia, Monument and Skelly fields.

The area opened several weeks ago east of the Loco Hills field in Eddy County is receiving considerable development. Ployhar & Rook's No. 1 Gates, a mile west and slightly north of the Kersey & Co. discovery well, is drilling at 520 ft. in anhydrite. It is in Section 15-18-30. L. R. Manning's No. 1 Payton-McClay, 1¾ miles west of the discovery, pumped 52 bbl. of oil in 23 hours from a plugged-back depth of 3,133 ft. from 3,280 ft.

Eddy County's High Lonesome area continues active as a number of wells reported drilling progress. C. B. Buck's No. 1 State, Section 31-16-29, was bailing 4 to 5 bbl. of oil hourly while drilling below 2,600 ft. Carper Drilling Co.'s No. 2 Smith-Blake, Section 31-16-29, was drilling below 2,296 ft.

Eddy County

Addison's No. 1 Sullivan, 600 ft. from N and E lines. Sec. 29-18-31. P.O.P. 3,573 ft.; pmpd. est. 60 B.O.P.D.
Knox & Brewer's No. 1 Fred Hess, 330 ft. from N and W lines, Sec. 21-16-29. C.&P.
Everts' No. 1 Greer, SE cor. Sec. 31-16-31. Prep. shoot 3,713-29 ft.
Everts & Moran's No. 1 Ranuz, NE NW Sec. 18-23-26. Loc.
L. R. Manning's No. 1 Patton-McClay, 330 ft. from N and 1,650 ft. from E lines, Sec. 21-18-30. Topped oil sd. at 3,009 ft.; drlg. ahead toward regular pay zone; testing pay 3,004-3,133 ft.; H.F.O.; P.O.P. 3,133 ft.; made 41 bbl. in 16 hrs. at 3,041 ft.; tstg. 52 B.O.P.D. on pmp.
G. A. Grober's No. 1 Wright, 1,980 ft. from N and W lines. Sec. 25-18-29. Tstg. S.O.&G. 1,382 ft.; est. 10 B.O.P.D.; S.D.O. 1,711 ft.
Mac T. Anderson's No. 1 L. J. Root, 660 ft. from S and W lines, Sec. 27-9-30. Prep. drill 2,526 ft.; O.S. 2,520-25 ft.; S.D.R. 2,548 ft.; flwd. est. 20 B.O.P.D.; prep. shoot 2,512-57 ft.
Artesia Drlg. Co.'s No. 1 Hoffman, SE SE SE Sec. 14-17-24. S.D. for liner 970 ft.
Trojan Oil Co.'s No. 1 Grant, SW SW NE Sec. 33-20s-25e. S.O. 1,530 ft.; S.D.R. 1,580 ft.
Dodson Drlg. Co.'s No. 1 State, 2,310 ft. from N and 330 ft. from E lines, Sec. 17-16-29, ½ mi. N of Nolen's No. 1 Iles discovery well. C.&P.
Dodson Drlg. Co.'s No. 1 A. H. McElreath, 330 ft. from S and W lines, Sec. 3-16-29, 2½ mi. NE of Nolen's pool opener. Est. 175,000 cu. ft. gas; S.D.O. 2,750 ft.
Anderson's No. 1 Hess, 330 ft. S and W lines, Sec. 10-16-29. Spdr. on ground.
Anderson's No. 1 Neeson, 330 ft. from W and 2,310 ft. from N lines, Sec. 4-16-30. C.O.; S.O. 1,510-25 ft.
C. B. Buck's No. 1 State, 330 ft. from S and 4,290 ft. from E lines, Sec. 31-16-29. Drlg. 2,600 ft.; S.O.
Carper Drlg. Co.-Tallmadge's No. 2-A Miles-State, 2,310 ft. N and E lines, Sec. 32-17-30. Loc.
Clark & Cooper's No. 1 Ward, 1,980 ft. S and E lines. Sec. 20-16-27. Loc.
Dave Elder's No. 1 Hess, 1,650 ft. from N and 330 ft. from W lines, Sec. 21-16-29. S.D.O. 2,716 ft.
A. E. Frazier's No. 1 H. E. Yates, 330 ft. from N and 1,650 ft. from E lines, Sec. 6-20-27. S.D. 817 ft.
Frederick's No. 1 Reed, 1,980 ft. from S and W lines, Sec. 28-24-38 (O.W.D.D.). Est. 1,500,000 cu. ft. gas at 2,300 ft.; W.O.C. 2,893 ft.
Jack Harris' No. 1 Josey, 370 ft. from S and 2,310 ft. from W lines, Sec. 20-20-23. M.I.M.
Wilder's No. 1 Young, 1,650 ft. from N and W lines, Sec. 23-16-29. Drlg. 1,730 ft.
Sam Montgomery's No. 1 Kaltenback, 330 ft. from N and W lines, Sec. 24-16-27. Drlg. 920 ft.
Sam Weiner's No. 1 Hess, 330 ft. from S and E lines, Sec. 9-16-29. S.D.R. 1,925 ft.
Thomas & Bowers' No. 1 H. W. Etz, 2,310 ft. from N and 330 ft. from W lines, Sec. 13-16-30. Drlg. 2,260 ft.

Chaves County

Comanche Drlg. Co.'s No. 4 Sloop & Purcell, 510 ft. from N line and 330 ft. from E line, Sec. 5-11-26. Loc.
Farrar-Jones-Cunningham's No. 1 Samples, 330 ft. from S and E lines, Sec. 1-7-27. Loc.
H. E. Yates' No. 1 Johnson, 660 ft. from N and 1,980 ft. from W lines, Sec. 24-15-28. W.O.C. 3,285 ft., T.D.; bridge 1,700 ft. and cmtd.
G. H. Cowden's No. 1 Brunson, 330 ft. N and W lines, Sec. 27 9s-30e. C.&P.
Grastorff-Caudill & French's No. 1-A Smith (O.W.D.D.), Sec. 1-4-29. S.D.R. 3,686 ft.
E. J. Fisher's No. 1 Hill, CSL S½ Sec. 8-15-25. S.D.O. 850 ft.
Helmes & Martin's No. 1 Stephens, 660 ft. from N and 1,980 ft. from E lines, Sec. 22-15-29. S.D.O. 1,835 ft.
Sam Sanders' No. 1 T. H. fee, 2,310 ft. from N and W lines, Sec. 25-15-29. Drlg. 3,450 ft.
T. S. Stanfield's No. 1 Bogle, 330 ft. N line and 2,310 ft. E line, Sec 27-13-25. R.U.S.T. 923 ft.; S.S.O.

Dona Ana County

Picacho O. & G. Co.'s No. 12 Armstrong, Sec. 15-23s-1w. W.O. csg. 2,620 ft.
Slack & Mahres' No. 1 Simmons, Sec. 35-22s-5e. Fsg. 2,785 ft.

Luna County

O. D. Berry's No. 1 Berry, SE SE SW Sec. 33-22s-10w. S.D.O. 1,000 ft.

Lea County

Culbertson & Irwin's No. 1 Lankford, 660 ft. from N and 1,980 ft. from W lines, Sec. 25-23-36. Gas from 2,955-3,007 ft.; increased to 75,000,000 cu. ft. per day at 3,030 ft.; milling on iron at 3,465 ft.; T.D. 3,618 ft.
Barefield & Brooks' No. 1 Walker, 1,980 ft. from N and 660 ft. from E lines, Sec. 5-18-32. C.O. 3,660 ft.; flwd. by heads from sat. 3,685-3,700 ft.; P.O.P. 3,734 ft.; pmpd. 65 B.O. in 10 hrs. and pmpd. off; pmpd. 8 B.O. in 3½ hrs.; still tstg.
Leonard Oil Co.'s No. 1 Ginsberg, 1,980 ft. from N and 660 ft. from W lines. Sec. 7-25-38. Prep. abd. 3,975 ft.; sulf. wtr.
J. D. Barefield's No. 2 Stroup, 1,980 ft. from N and E lines, Sec. 12-18-32. Fsg. tools 795 ft.
Argo Oil Corp.'s No. 1 Texas Co.-State, west offset to Westlea Oil Co.'s pool opener. S.I.; storage; swbd. 100 B.O.P.D.; T.D. 2,657 ft.; P.O.P.
Westlea Oil Co.'s No. 1 Texas Co.-Cleveland, 2,310 ft. S of Westlea pool opener and 330 ft. from N and 1,980 ft. from W lines, Sec. 21-20s-32e. S.D.O. 2,672 ft.; sulf. wtr.

Otero County

Ernest's No. 1 Ernest, Sec. 20-25-7. S.D. 2,504 ft.
Otero Oil Co.'s No. 1 State, SE NW Sec. 5-22-10. S.D. 736 ft.

Socorro County

Joiner Oil Corp.'s No. 1 Belen Grant, 2,310 ft. N and W lines, Sec. 16-3-1. Loc.

SOUTHEAST NEW MEXICO COMPLETIONS

Eddy County

In the Loco Hills field Sallee & Yates' No. 1 State, NE NE Section 2-18-29, flowed 100 bbl. in 2 hours through open casing after shot in pay from 2,653 to 2,676 ft.

Lea County

In the Vacuum pool Magnolia Petroleum Co.'s No. 51 State-Bridges, SW SW Section 12-17-34, pumped 195 bbl. daily after shot in pay from 4,558 to 4,695 ft.

Luna County

A wildcat, O. D. Berry's No. 1 Berry, SE SE SW Section 33-22-10, junked and abandoned at total depth of 1,075 ft.

NORTHWEST NEW MEXICO

Bernalillo County

Norins Realty Co., Inc.'s No. 2 North Albuquerque. NE SE NW Sec. 19-11n-4e. S.D. 4,775 ft.
Norins Realty Co., Inc.'s No. 2 Pajarito, Sec. 22-9n-1e. Drlg. below 2,000 ft.

San Juan County

Angel Peak Oil Co.'s No. 9 fee, C NE NW Sec. 24-28n-11w. M.I.M.; (first report).
Continental Oil Co.'s No. 102 Rattlesnake, SE SE SW Sec. 12-29n-19w. M.I.M.; (first report).
Continental Oil Co.'s No. 100 Rattlesnake, SE NW NE Sec. 2-29n-19w. T.D. 7,407 ft.; rng. 7-in. to cmt. at 7,398 ft.

San Miguel County

Ben E. Keith's No. 1-X McCune, SW SE SW Sec. 32-16n-12e. Cg. 750 ft.

Socorro County

Joiner Oil Corp.'s No. 1 Belen Grant, SE NW Sec. 16-3n-1e. T.D. 600 ft.; rng. 10-in. to bttm.

COLORADO

El Paso County

F. F. Hintze et al's No. 1 State, CEL SE SE Sec. 16-11s-60w. T.D. 855 ft.; sdtrkd. and cmtd. off bit and prep. to res.

Fremont County

The Waterville Oil Co.'s No. 2 N. J. Person, CWL NE NE Section 17-19s-69w, Florence district, was abandoned at 330 ft.

Huerfano County

I. E. Sideman-White et al's No. 1 Martinez, C SW NE Sec. 33-36n-67w. Bldg. rig.
Harold F. Collins et al's No. 1 Bartlett-Howard, SE NW Sec. 3-28s-68w. S.D. 468 ft.; acct. weather.

La Plata County

Nick Spatter's No. 1-X Bryce, C SW SW Sec. 31-33n-9w. Drlg. below 2,635 ft.; 5-in. at 2,630 ft.

Park County

South Park Oil Co.'s No. 1 Lemar, NE NE SE Sec. 34-11s-75w. Drlg. 7,156 ft.

Moffat County

Great Divide Pet. Co.'s No. 1 Wyatt, SE¼ Sec. 6-9n-92w. S.D. 724 ft.; 10-in. frozen at 650 ft.; will res. as soon as weather cond. improve.

Routt County

L. C. Craig-E. L. Moore's No. 1-X Erwin, C SW NE Sec. 33-7n-85w. T.D. 2,220 ft.; trying to recmt. 6⅝-in. at 2,055 ft.

Washington County

Thurman Oil, Tr.'s No. 1 Ruby, NW NW SW Sec. 3-5s-52w. S.D. 1,150 ft. (C.D.); acct. weather; will run 5½-in. and change over to C.T.

WYOMING

Big Horn County

The Mule Creek Oil Co.'s No. 1 Binney-Sessions, SW NW NW Section 34-56n-97w, Garland field, which was completed last summer in the Madison lime at 4,105 ft. for 7½ bbl. an hour, was deepened 50 ft. to 4,155 ft. and recompleted for 300 bbl. per day on the pump.
Frank S. Scott's No. 1 Robertson, SE SE SE Sec. 6-54n-93w. S.D. 650 ft.; acct. weather.
Yale Oil Corp.'s No. 1 Simonson, Lot 53, Sec. 34-55n-97w. T.D. 1,140 ft.; cmtd. 10¾-in. at 1,138 ft.; W.O.C.

Carbon County

Tri-State O. & R. Co.'s No. 17, NW SE NW Sec. 20-21n-80w. Drlg. 184 ft.
Sinclair-Wyoming Oil Co.'s No. 4-E, C SE SW Sec. 29-26n-87w. Drlg. 3,740 ft.
Albert Dev. Synd.'s No. 1 Boeke, SW NW Sec. 18-25n-79w. S.D.O. 922 ft. in grnt.

Converse County

Shawnee Expl. Co.'s No. 1 Salisbury, SE SW NE Sec. 27-32n-69w. B.R. and M.I.M.

Fremont County

Lincoln O. & G. Co.'s No. 8 Tribal, CEL NE SW Sec. 23-1s-1e. T.D. 457 ft.; recond. to D.D.
Lincoln O. & G. Co.'s No. 7 Tribal, SE NE SW Sec. 23-1s-1e. S.D. 424 ft., temp.
Consolidated Oil Properties, Inc.'s No. 3 Ewart, C SW SE Sec. 16-1n-1w. S.D. 1,530 ft.
F. F. Hintze's No. 1 Jones, CWL NW NW Sec. 7-28n-92w. T.D. 1,117 ft.; est. 10,000,000 cu. ft. gas in second Frontier; S.D.

Hot Springs County

Oscar B. Grace's No. 5 Govt., Lot 3, SE NW Sec. 21-43n-92w. Spdg. 15 ft.; Kirby Creek dist.
John W. Selby's No. 1 Kyne, SW NW Sec. 22-43n-92w. S.D. 732 ft.; weather.
J. W. Bales' No. 1 Govt., CWL NW SE Sec. 21-42n-90w. T.D. 762 ft.; cmtd. 12½-in. on bttm. to S.O.W. in Muddy sd. at 702-20 ft.

Lincoln County

H. C. Harris' No. 1 Govt., SE NW NW Sec. 23-21n-117w. Drlg. L. 2,612 ft.
Fontenelle Dev. Co.'s No. 1 Pomroy, NE SW Sec. 5-24n-113w. Drlg. 100 ft.; surf. csg. at 25 ft.

Natrona County

Continental Oil Co.'s No. 1 McGrath, C NW SW Sec. 15-34n-78w. T.D. 7,331 ft.; bailed ¾ B.O. and ¾ B.W. per hr. after perf. with 50 additional holes at 5,628-85 ft.; S.D. for winter.
General Pet. Corp.'s No. 1-21-G, NW NW NW Sec. 21-35n-77w. Drlg. sh. 5,900 ft.

Niobrara County

Drilling operations in Lance Creek were slowed down when the thermometer registered 30 below zero. However, one well was completed and locations for seven new operations were released.

The Continental Oil Co.'s No. 6 Sam Joss, NW NW NE Section 6-35n-65w, an inside well on the west side of the field, was completed at 5,308 ft. in the Leo sand at 5,258-5,308 ft. After acidizing with 1,000 gal., it flowed 459 bbl. the first 15 hours and was given a rating of 600 bbl. per day.

Most of the new operations are inside wells. Most interesting is the Continental Oil Co.'s No. 6 Apex O.P.C.-4, an outpost on the north side, an east offset to the same company's No. 4 Apex-1, a Leo-sand well, and two locations west of two Sundance-sand wells in the area where the Sundance pool was extended in 1939. The Minnelusa Oil Corp.'s No. 1 Ford also is an outpost well on the north, and an east offset to Argo's No. 8 Ford, a drilling well.

Pipe-line rates through the Utah Oil Refining Co.'s new line to Salt Lake City filed at Washington, D. C., are 74 cents per barrel to Wood Cross, Utah, and Salt Lake City, and 55 cents from the Medicine Bow field and the Rock River station to Salt Lake City.

Minnelusa Oil Corp.'s No. 1 Ford, SW NW NE Sec. 33-36n-65w. R.U.R.; (first report).
Continental Oil Co.'s No. 6 Apex-O.P.C.-4, SW NW NW Sec. 35-36n-65w. Loc.; (first report).
Ohio Oil Co.'s No. 14 Carrie Putnam, SW NW NW Sec. 33-36n-65w. Loc.; (first report).
Ohio Oil Co.'s No. 15 Carrie Putnam, NW NE SW Sec. 33-36n-65w. Loc.; (first report).
Continental Oil Co.'s No. 10-B Schuricht, SE SE SE Sec. 6-35n-65w. Loc.; (first report).
Continental Oil Co.'s No. 6-A Schuricht, SE NE NE Sec. 6-35n-65w. R.U.R.; (first report).
Continental Oil Co.'s No. 5 Apex O.P.C.-1, NE SW NE Sec. 34-36n-65w. Loc.; (first report).
Argo Oil Co.'s No. 8 Ford, SE NE NW Sec. 33-36n-65w. Drlg. 2,930 ft.
Argo Oil Co.'s No. 12-A Elliott, SE NW NE Sec. 7-35n-65w. Drlg. 3,720 ft.
Minnelusa Oil Corp.'s No. 4 H. & M., NE NE SE Sec. 7-35n-65w. S.D. 822 ft. for wtr.; cmtd. 13-in. 300 ft.
Minnelusa Oil Corp.'s No. 1-B Joss, NE SW NW Sec. 7-35n-65w. Drlg. 5,074 ft.; T. Converse 4,960 ft.; some sat. 4,999-5,018 ft.
A. B. Cobb's No. 5 Novick, NE NE NW Sec. 6-35n-65w. T.D. 5,598 ft.; making directional survey.
Ohio Oil Co.'s No. 4 Cash-1, NW NE SW Sec. 4-35n-65w. Drlg. 5,073 ft.
Ohio Oil Co.'s No. 6 Rohlff, SE NW NE Sec. 32-36n-65w. Drlg. 2,298 ft.
Continental Oil Co.'s No. 5 Apex-O.P.C.-2, NW NW SE Sec. 34-36n-65w. Cg. in dolo. at 5,351 ft.
Continental Oil Co.'s No. 17 Tom Bell, SE SE NE Sec. 33-36n-65w. Drlg. anhy.&dolo. 4,947 ft.
Continental Oil Co.'s No. 3 Rodeo-4, SE NE NE Sec. 35-36n-65w. Cg. sh. 4,250 ft.; T. Morrison 3,938 ft.; T. first Sundance 4,105 ft.
H. D. Moore's No. 1 Berggren, SE NW Sec. 23-35n-63w. Drlg. 2,526 ft.

Sublette County

The Marvel Oil Co.'s No. 1, NE NE SE Section 28-27n-113w, a flank well in the La Barge field, was completed at 1,040 ft. for 8 bbl. per day on the pump.

California Oil Co.'s No. 1 Unit 1, C SW NE Sec. 14-31n-109w. T.D. 10,003 ft.; S.D. for winter.
North La Barge Oil Co.'s No. 1 Govt., SW NE SE Sec. 8-27n-113w. Drlg. 1,408 ft.
Wyo. Pet. Corp.'s No. 1 Chas. Budd, C NE NE Sec. 10-29n-113w. T.D. 3,054 ft.; may drill offset to gas sd. and continue as deep test.
Yellowstone Oil Co.'s No. 1 Budd, SW SE SE Sec. 6-30n-112w. Drlg. 1,400 ft.

Sweetwater County

Vermillion Oil Co.'s No. 2 Govt., SW SW SW Sec. 7-12n-99w. Drlg. 2,516 ft.; dry sd. at 2,475-2,500 ft.
Sinclair-Wyoming Oil Co.'s No. 90-A, SW SW NW Sec. 11-26n-90w. Drlg. 1,495 ft.

Uinta County

Stove Creek Oil Co.'s No. 1 Govt., NE SW NE Sec. 26-14n-119w. S.D. 2,410 ft., in sh.
Meridian Oil Co.'s No. 1, NW NW NE Sec. 26-13n-119w. Drlg. 800 ft.; Evanston dist.
Spring Valley Pet. Co.'s No. 13, CSL SE SE Sec. 22-15n-117w. Drlg. 1,850 ft.

Weston County

Bruce C. Teeter's No. 1 State, C SW NE Sec. 36-42n-61w. T.D. 2,287 ft.; set whpstk. and drlg. by.
Butcher Bros.' No. 5, SW NW NE Sec. 16-46n-63w. R. O.G.
Gose Oil Synd.'s No. 1, NE NE NE Sec. 28-47n-63w. Drlg. 4,950 ft.
F. J. Diiger, Tr.'s No. 17, SW NW SW Sec. 30-46n-63w. Drlg. below 300 ft.
Aitkin & Hultgren's No. 1, CNL NW SE Sec. 16-46n-63w. R.O.G.
Chas. F. Marten's No. 21, NW NE NE Sec. 19-46n-63w. Shot sd. at 1,270-79 ft.; C.O.
Osage Trust Co.'s No. 6 McCullough, SW NE SW Sec. 33-46n-64w. Drlg. below 1,200 ft.

MONTANA

Big Horn County

Dr. Crosby's No. 1 Pat., SE SE NE Sec. 16-1s-13e. S.D. temp., 1,000 ft.; Toluca dist.

Carbon County

Henderson Prod. Co.'s No. 3 Woods, SW SE NE Sec. 35-9s-23e. Drk.; W.O. weather.
Miracle Oil Co.'s No. 2 Govt., CWL NE SE Sec. 3-6s-23e. T.D. 2,338 ft.; C.O. at 1,590 ft.; to res.
Ohio Oil Co.'s No. 9 Souders, C NE SW Sec. 2-7s-21e. T.D. 5,511 ft.; pmpg. in attempt to exhaust wtr.
R. C. Tarrant's No. 2 McKay, C SE NW Sec. 4-6s-18e. T.D. 2,625 ft.; tools rec.; prep. res.

Choteau County

Security Pet. Corp.'s No. 1 Johnson, C NE NE Sec. 23-26n-3e. S.D. 2,091 ft. to fill in lease blk.

Glacier County

Cut Bank had two new operations, but no completions. An interesting recompletion was the Texas Co.'s No. 2 Tweedy, C NE NW Section 21-35n-6w, ½ mile southwest of the Santa Rita's No. 1 Lander, the biggest well ever completed in Cut Bank and which is still a good producer. The Tweedy well, which was completed in sand at 2,940-67 ft. in the fall of 1937, was deepened to 2,987 ft. and responded by flowing 75 bbl. per day. It originally came in for 500 bbl. per day through the casing.

British American Oil Co.'s No. 12 Tribal, C SE NW Sec. 34-35n-6w. Loc.; (first report).
R. C. Tarrant's No. 5 State, NW NE SE Sec. 36-34-6w. R.U.; (first report).
Santa Rita O. & G. Co.'s No. 4 Lander, C SE SW Sec. 16-35n-6w. Drlg. 1,025 ft.; Colo. at 675 ft.; 10¾-in. at 685 ft.
Helmac, Tr.'s No. 3 Govt., Lot 3, Sec. 32-33n-5w. R.O.G.
R. C. Jeffries' No. 1 Exchange Oil Co., C NW NW Sec. 34-35n-6w. Drlg. 1,650 ft.; 10¾-in. cmtd. at 580 ft.
Glacier Prod. Co.'s No. 6 State, CWL NW¼ Sec. 16-33n-5w. Drlg. 650 ft.; Colo. 525 ft.; 10¾-in. at 545 ft.
Glacier Prod. Co.'s No. 3 Scheuren, C SW SE Sec. 20-33n-5w. Drlg. 1,635 ft.; Colo. 680 ft.; 10¾-in. at 704 ft.
Glacier Prod. Co.'s No. 2 Lookhoff, C NW NE Sec. 33-33n-5w. Drlg. 2,140 ft.
Santa Rita O. & G. Co.'s No. 2 Rasmussen, NE SW SW Sec. 32-33n-5w. Drlg. 1,825 ft.
A. B. Cobb's No. 1 Osuri, C SW NW Sec. 30-37n-4w. R.O.G.
Cobb-Reagan's No. 4 Jackson, SW SW SE Sec. 5-32n-6w. R.U.R.

Hill County

J. Gudgel's No. 1 Federal Ld. Bnk., C SE SW Sec. 19-33n-15e. Drlg. 300 ft.

Petroleum County

Watson Oil Co.'s No. 1 Austed, SW NW SE Sec. 22-13n-28e. Drlg. 1,590 ft.

Toole County

A. Beardslee's No. 12 Swears, CSL SE NW Section 9-35n-2w, which had only a small show of oil in the contact at 1,640-46 ft., was acidized with 1,000 gal. and responded with an initial production of 45 bbl. per day on the pump. It is a completion.

Mosby Oil Corp.'s No. 3 Pederson, SE NW SE Sec. 7-35n-2w. Spdg. 80 ft.; (first report).
Big West Oil Co.'s No. 16 Dahlquist, SW NW NE Sec. 28-35n-3w. T.D. 1,000 ft.; rng. 8-in.
Coolidge & Coolidge's No. 2 McCurdy, NE NW NW Sec. 11-35n-3w. Drlg. 1,400 ft.
Casper T. Olen's No. 9 Engemoen, NW NE NW Sec. 14-35n-2w. S.D. 70 ft.
Lemac Oil Co.'s No. 1, C NE NE Sec. 27-36n-2w. T.D. 1,660 ft.; cmtd. 7-in. on bttm.; no Sunburst sd.
Frazier & Smith's No. 2 Van Note, NE SW NW Sec. 30-35n-2e. T.D. 1,350 ft.; cmtd. 7-in. on bttm.
Coolidge & Coolidge's No. 1 Maley, SW NE SE Sec. 31-36n-1w. S.D. 100 ft.
W. E. Rice Co.'s No. 4 Kearns, Lse. 8, C W½ E½ SE Sec. 18-35n-2w. T.D. 1,570 ft.; rng. 6⅝-in.
C. L. Smith, Agt.'s No. 1 Govt., SW SE NW Sec. 13-35n-2w. T.D. 1,345 ft.; cmtd. 7-in. at 1,265 ft.
Morton & Shaw's No. 2 Ellingson, SE NE NW Sec. 23-35n-3w. S.D. 780 ft.
Superior Pet. Co.'s No. 3 Haugen, C NE NE Sec. 11-35n-3w. S.D. 880 ft.

Yellowstone County

Calitana Oil Co.'s No. 1 Stallinberger, NE NE SW Sec. 18-3n-23e. T.D. 5,129 ft.; cmtd. 7-in. at 5,000 ft.; W. O.C.

UTAH

Grand County

Reeder Corp.'s No. 1 State, NE NE NE Sec. 16-22s-19e. Spdg. 40 ft.
Big Six Oil Co.'s No. 1 Govt., SE¼ Sec. 23-22s-19e. S.D. 525 ft. on top Dak., for repairs.
Cane Creek Oil Co.'s No. 2 Shaffer, NW SW SW Sec. 31-26s-21e. T.D. 3,360 ft.; S.D. to exchange permits for leases.

Daggett County

Mountain Fuel Supply Co.'s No. 4 Murphy, SW SE SW Sec. 21-3n-24e. S.D. 5,643 ft. for winter; cmtd. 6⅝-in. on T. Dak. at 5,640 ft.; tstd. 5,000,000 cu. ft. gas from top of sd.

Summit County

Longwell Pet. Co.'s No. 1, SE SW SE Sec. 35-3n-5e. Drlg. 3,256 ft., in sd.; S.O.

SOUTH DAKOTA

Harding County

South Dakota State Roy. Co.'s No. 1 State, SW NW Sec. 35-18-1e. Drlg. 7,845 ft.; S.O.

Butte County

Two Top O. & G. Co.'s No. 2, SE NE Sec. 30-10n-6e. T.D. 1,090 ft.; C.O.

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By STAFF CORRESPONDENT

Will Test Clinton Sand For Gas in Beaver County, Penn.

PITTSBURGH, Pa., Jan. 29.—A test of unusual interest is being started by John T. Galey and others in Beaver County, Pennsylvania, where material is being moved in to deepen the Oriskany-gas well on the James Tennis farm in South Beaver Township. The total depth of the well is now 4,613 ft. The hole will be drilled to the Clinton sand (Upper Ordovician), unless intervening production is found. The Clinton sand is expected to be drilled through at 6,500 ft., with the possibility of production in the Newburg (Silurian), at about 6,000 ft.

The test will be the first to the Clinton sand in Southwest Pennsylvania and the first on a proven Oriskany closure in the area. Other Clinton-sand tests in Columbiana and Washington counties, Ohio, and in Mercer County, Pennsylvania, were void of production in the Oriskany. The Tennis well was a good gas well in the Oriskany sand. Only two wells are now producing from that sand in South Beaver Township.

SOUTHEAST OHIO

In Morgan County, 1 mile west of the Muskingum River, Dion S. Birney has completed exploring the Cow Run sand on his fee, formerly the William and W. O. Sherwood farm in Section 32, Malta Township, with six wells drilled horizontally from a pit. No. 1 was drilled to 986 ft. It was located in the pit at 225°; No. 2 went 800 ft. at 45°; No. 3 to 967 ft. at 195°; No. 4 to 750 ft. at 15°; No. 5 to 856 ft. at 165°; No. 6 to 817 ft. at 345°. The production of these wells was not ascertained. It appears to be a completed operation.

In Licking County C. A. Davis completed an 800,000-cu. ft. gas well on the E. K. Totus farm in Section 16, Mary Ann Township in Clinton sand at 2,715 ft.

In Medina County Marine Trust Co. completed output wells No. 1-A on the George W. Packard farm, Tract 13, Lot 4, Chatham Township, in Berea grit at 362 ft.; No. 9-A W. M. Ripley farm, Section 13, same township, at 440 ft.; No. 16-A Daniel Ross farm, at 390 ft., in Tract 13, Lot 7. These wells have not been put to pumping and are part of the water-flooding program. On the W. A. Shaw farm this company completed No. 7-O W. A. Shaw at 364 ft., in Berea grit, as an input well.

In Muskingum County Gas Producing Co. of Ohio completed No. 7 Bayce heirs, in Section 19, Harrison Township, in Clinton sand at 4,259 ft. It is a gas well gaging 500,000 cu. ft. a day.

SOUTHWEST PENNSYLVANIA

In Armstrong County, Pennsylvania, J. C. Sefton and others' No. 3 Stanley Sowers, in Cowanshannock Township, completed in Bradford sand at 3,281 ft., as a gas well, gaged 48,000 cu. ft. a day. In this township, Equitable Gas Co. is drilling at 3,350 ft. in No. 2 D. W. Raraigh, and at 750 ft. in No. 3. T. W. Phillips Gas & Oil Co. is down 950 ft. in No. 2 Harry Boyer; at 340 ft. in No. 2 Jacob Boyer, and at 190 ft. in the John McKinney test. Peoples Natural Gas Co. is building rig on the A. S. Rearick land. Apollo Gas Co. has reached 2,475 ft. in the Hulda Bleakney test.

In Kiskiminitas Township Apollo Gas Co. is drilling at 2,240 ft. in the Tressler heirs test. Broman & Dorcey are down 2,440 ft. in No. 5 M. M. Martin. Peoples Natural Gas Co. is drilling by lost tools at 1,015 ft. on the J. M. Dunmire farm. In Wayne Township Penn Wayne Gas Co. is fishing at 212 ft. in the S. Paunch test.

In Boggs Township, Armstrong County, John Wray & Co. are drilling at 2,200 ft. in No. 2 Samuel Yockey, and at 1,300 ft. in the Dovid Zimmerman test. In Kittanning Township Edward Young is down 2,845 ft. on the Hugh Blair farm. In Plum Creek Township William McCollins is drilling at 1,500 ft. in the Add Reefer test.

Clarion-Indiana-Westmoreland

In Clarion County O. H. Culbertson and others completed No. 2 Bowersox in Red Bank Township, at 1,072 ft., Murraysville and Hundred Foot sands, and it is a gas well gaging 232,000 cu. ft. a day.

In Indiana County T. W. Phillips Oil & Gas Co. drilled the test on the W. A. Schroth farm in Cherryhill Township, to 3,404 ft. through Bradford sand, and it was dry. Same company is down 1,635 in the Charles Tyack test. In Center Township Phillips is drilling at 2,180 ft. on the B. R. & P. Coal Co. land and in Blacklick Township, at 3,267 ft. in the J. L. Jewell test.

In Washington Township, Indiana County, Dr. Mehan and others are testing at 1,360 ft. in the George Nesbit test. J. Cloid Rimer and others reached 450 ft. in the Perdon heirs test. In White Township T. W. Phillips Gas & Oil Co. is drilling at 1,225 ft. in the H. B. Diebenderfer test.

In Westmoreland County Apollo Gas Co. is drilling at 240 ft. in the D. M. Jones heirs test in Allegheny Township. In Bell Township the Kiski Valley Gas Co. is drilling at 3,960 ft. on the John Beighley farm, with Bradford sand at 3,628-48 ft. and a good showing of gas.

Fayette-Greene

In Greene County Union and Monongahala Gas Co. completed a fair gas well on the Barclay and Roos lease in Greene Township. Big Injun sand was topped at 1,705 ft. with over 3,000,000 cu. ft. of gas at 1,817 ft. and a total depth of 1,820 ft.

In Richhill Township, Greene County, W. L. Walters and others completed a gas well on the Cecil Clutter farm with Big Injun sand at 1,682 ft.; 72,000 cu. ft. of gas at 1,684-89 ft. and some gas at 1,708-72 ft. Here, O. I. Dille and others are drilling at 1,560 ft. in the Madison Hughes test. In Wayne Township the Manufacturers Light & Heat Co. is drilling at 3,240 ft. on the Tustin heirs farm, with gas testing 393,000 cu. ft. a day.

In Fayette County Duquesne Gas Co. completed a gas well on the Peter Maldovan farm in Nucholson Township, in the Fifth sand at 2,410 ft. and it has a volume of 175,000 cu. ft. a day. In German Township Wahler-Powers Oil & Gas Co. is down 2,010 ft. on the Maryin Grey farm.

Washington County

In North Strabane Township, Washington County, the test of the Keystone Drilling Co. on the Mary Means (Joseph Gregor) farm was drilled through the Fifth sand to 3,468 ft. and it was dry.

Drilling in the remainder of Washington County has been retarded by the heavy snow and cold. In South Franklin Township A. V. Lewis and others are down 2,910 ft. in No. 2 Sarah W. Phelan. In East Finley Township Manufacturers Light & Heat Co. is down 2,789 ft., deepening No. 2294 Esther Kerr. In Somerset Township Equitable Gas Co. is down 1,585 ft. in the Weir heirs test.

In Allegheny County this company is drilling at 750 ft. on the J. Hickman farm. In Middlesex Township, Butler County, Heck, Larkin and others are reaming at 1,814 ft. before running casing in the G. Jeuther test.

Deep Tests

On Chestnut Ridge in Fayette County the test of New Penn Development Co., Snee and others on the Piedmont Coal Co. lease in North Union Township, was inactive during the week due to the need of gas in the lines. All wells in this pool are in the line now. In Maryland these operators had reached 5,399 ft. on the Humberson farm on the Accident dome in Garrett County. On Laurels Ridge in Stewart Township, Fayette County, these operators and E. G. Mueller have reached 4,261 ft. on the Gregg L. Neel farm.

WEST VIRGINIA

Two oil wells were completed in West Virginia. In Ritchie County West Virginia Investment Co. completed No. 24 Joseph Parks in Grant district, in Squaw sand at 2,041 ft. It is showing for 30 bbl. a day.

In Calhoun County Schroeder & Hock completed their fee test in Sheridan district in the Salt sand at 1,820 ft. and it is good for 3 bbl. a day.

Gas Wells

In Boone County Pond Fork Oil & Gas Co.'s No. 15 fee, in Washington district, was completed at 2,700 ft., Berea sand, and has a gas well gaging 1,000,000 cu. ft. a day, along with 2 bbl. of oil.

In Cabell County R. H. Adkins, trustee, completed a well on the J. C. Sidebottom farm in Grant district, at 2,109 ft. with the Berea at 2,074-98 ft., and a gage of 200,000 cu. ft. a day.

In Clay County Pittsburgh & West Virginia Gas Co. completed No. 7643 J. L. Caldwell in Otter district at 1,722 ft., Salt sand, and it is good for 284,000 cu. ft. a day.

In Marshall County Orndoff and others completed a gas well on the I. F. Harviston farm in Franklin district in the third Salt sand at 1,800 ft. It is good for 200,000 cu. ft. a day. In Cameron Township A. L. Phillips and others drilled a dry hole on the John W. McGinnis farm through the Big Injun sand to 1,830 ft.

In Ritchie County Hope Natural Gas Co. deepened No. 7421 I. A. Gainer in Murphy district to 1,924 ft., Injun sand, and it was dry, and is being abandoned.

Oriskany Gas Field

No wells were completed in the Oriskany gas field in Kanawha County. In Poca district West Virginia Gas Corp. is drilling at 5,007 ft. with the Oriskany topped at 4,944 ft., and a gage of 398,000-cu. ft. a day showing.

In Union district, Kanawha County, the final gage of Godfrey L. Cabot, Inc.'s well on the L. M. Lafollette farm, after cleaning out, was 1,226,000 cu. ft. a day.

Outside Deep Tests

In Washington district, Jackson County, the Columbian Carbon Co. brought in a large gas well on the Helen M. Hoge farm. Corniferous lime was topped at 5,171 ft.; Oriskany 5,281-99 ft.; gas 5,284-99 ft.; total depth 5,299 ft., and a gage of 15,059,000 cu. ft. a day without a shot; rock pressure 1,540 lb. In this district, this company is drilling at 5,174 ft. in No. 1 Putnam.

In Grant district, Jackson County, Joe Rubin and others found 34 ft. of Oriskany sand topped at 4,782 ft. in the test on the Henry Morris farm with a final gage before the shot of 35,000 cu. ft. a day. It will be shot this week.

Southwest Texas Fields

(Continued from Page 49)

bbl., pumping. Jack Starrett and others' No. 1 Adami, 1,050 ft., dry and abandoned.

Zapata County

Charco Redondo field: Ed Mathis and others' No. 96 Trevino, 3,010 ft., dry and abandoned. Mirando Valley field: Buffalo Oil Co.'s No. 2-B Hinnant, perforated casing 2,000-03 ft., dry gas well. Interstate Minerals, Inc.'s No. 28 Lopez, sand 1,768-76 ft., 12 bbl. per hour, jetting. Interstate Minerals, Inc.'s No. 29 Lopez, perforated casing 1,712-40 ft., 88 bbl., jetting.

Kansas Developments

By DAL DALRYMPLE

North Bornholdt Discovery Is Deepened, Oil Flow Increases

Cold weather and unfavorable field conditions continued to hamper drilling activity in Kansas, but did not prevent extensions to some of the proven pools and completion of several big producing wells.

One of the outstanding developments of the week was deepening of the North Bornholdt discovery well in McPherson County, resulting in a large increase in production. Springrose Drilling Co. and Central Petroleum Co.'s No. 1 Swanson, CNL NW NW Section 18-20-5w, was deepened from 3,343 to 3,347 ft., total depth, in chat topped at 3,304 ft. It filled all available tankage in 5 hours before being shut in, flowing 1,383 bbl. of 39-gravity oil. No water was in evidence. The discovery was completed originally for 180 bbl. of oil daily.

Hays & Potter's No. 1 Vonfeldt, NW cor. Section 6-15-14w, gave promise of extending the Big Creek pool in Russell County ¾ mile southeastward. It topped Lansing lime at 2,971 ft. and had porosity at 2,995-3,000 ft., 3,060 ft., total depth, and oil was reported to have risen 700 ft. in the hole. It was to be treated with acid. Location is on an Ohio Oil Co. farmout.

Two extensions to the Wherry field, Rice County, were recorded. Carlock, Dufton, Pulse & Schneider's No. 2-A Renollet, SW NE SE Section 36-20-8w, ¼ mile west of production, was bottomed at 3,320 ft. in conglomerate and made top allowable potential of 3,000 bbl. of oil. Carlock & Dufton's No. 1-B Renollet, NW NW SE Section 36-20-8w, extended the area another ¼ mile. It found conglomerate at 3,317-21 ft., total depth, and oil was reported to have filled the hole and started flowing within 20 minutes. Both outposts were reported free of water.

The multiplicity of gas pay sands found in the Frederick J. Kasper, trustee, and others' No. 1 Kaths, Section 33-13-22, gas-pool opener in Johnson County, is commented upon in a letter from Mr. Kasper, Kansas City operator, as follows:

"We had five gas sands down to the Bartlesville—the Knobtown, 56,000 cu. ft. of gas shut off outside the 6¼-in. pipe, and the Lexington, upper and lower Squirrel, and a sand below the Ardmore lime between the 4⅞ and 6¼-in. These gases between the casing probably may total 300,000 or 400,000 cu. ft. Bartlesville sand (topped at 784⅛ ft.) was drilled in through 4⅞-in. pipe and it is estimated to be good for close to a half million feet of gas, with around 560 lb. rock pressure, which we have saved. As soon as the weather moderates we will pull the 4⅞-in. pipe and will make an attempt to save gas above the Bartlesville by putting 4-in. over the 2-in. with a packer on the bottom which we will mud off before pulling the 6-in. We hope to save considerable of this gas and let it produce between the 4-in. and the 2-in. pipe." The operators own considerable acreage in the vicinity.

Russell County

Two completions in the Hall area of Russell County were: Coralena Oil Co.'s No. 1 Ehrlich, SW SE SW Section 19-14-13w, had Lansing pay at 2,966-70 ft. and pumped 887 bbl. of oil in 8 hours, with initial potential of 2,662 bbl. Total depth was 3,190 ft. R. H. Shield's No. 1 Shaffer, NE NE SE Section 34-14-13w, had Lansing pay at 2,822-70 ft., total depth, pumped 170 bbl. of oil in 8 hours and made potential of 511 bbl. daily.

Cities Service Oil Co.'s No. 4-C Tittle, NW NW NW Section 13-15-14w, Trapp pool, found Lansing lime at 3,088-3,104 ft., pumped 362 bbl. of oil, cutting 10 per cent water, in 8 hours and made potential of 1,087 bbl.

Shell Oil Co., Inc.'s No. 1 Dumler, SE NE NW Section 24-14-14w, made drill-stem test at 3,186-94 ft., total depth, opened for 20 minutes and found 180 ft. of oil and 210 ft. of water. After electrical survey it was dry and abandoned.

Haynes & Anschutz's No. 1-A Maag, NW SW SW Section 7-15-13w, Coralena pool, had slight showing of oil at 3,120 ft., total depth, was acidized with no increase and was abandoned.

Skelly Oil Co.'s No. 8 Rein, N½ NW SW Section 8-15-13w, in the Coralena pool, pumped 417 bbl. of oil in 8 hours and pumped potential of 1,251 bbl. from Lansing lime from 2,985-3,003 ft., total depth.

Stanolind Oil & Gas Co.'s No. 1-B Michel, W½ NW NW Section 36-14-14w, Michel area, topped Lansing at 2,928 ft., total depth 3,156 ft., pumped 256 bbl. of oil in 8 hours and made potential of 770 bbl. daily.

Phil-Han Oil Co.'s No. 1 Mills, SE SW SW Section 12-14-15w, Gorham area, had Lansing lime at 3,158-62 ft., total depth 3,165 ft., was acidized with 8,000 gal. and pumped and flowed 313 bbl. in 8 hours, making potential 939 bbl.

Estimated Daily Production

Estimated daily production for Kansas for the week ended January 27, and for the preceding week was as follows:

	Barrels	
	Jan. 27	Jan. 20
Oxford City	850	800
Burrton	9,400	9,350
Ritz-Canton	4,500	4,200
Graber	3,050	3,000
Hollow-Nikkel	1,750	1,650
Lerado	1,150	1,100
Voshell	1,700	1,650
Wellington	2,150	2,000
Ellsworth County:		
Lorraine	1,500	1,800
Other pools	1,610	1,910
Rice-Barton counties:		
Bloomer	4,400	5,300
Chase	4,300	5,050
Geneseo	5,250	4,900
Raymond	450	350
Silica	11,350	11,700
South Silica	2,500	2,750
Keesling	800	800
Wherry	3,900	3,750
Miscellaneous Rice	4,390	2,095
Miscellaneous Barton	6,030	6,453
Trapp district	12,050	12,400
Balance Russell County	18,800	18,185
Sedgwick County	3,450	3,300
Ellis County:		
Bemis	7,400	6,950
Miscellaneous	4,340	8,575
Kingman County	830	920
Stafford County	8,255	6,500
Greenwood County	8,000	8,100
El Dorado	7,050	7,300
Other fields	26,545	33,610
Total Kansas	167,750	176,650

Ellis County

In the Bemis pool, Ellis County, Shell Oil Co., Inc.'s No. 30 Rumsey, SE NE NE Section 23-11-17w, was completed in Arbuckle lime at 3,389-3,400 ft., total depth. It swabbed 126 bbl. of oil in 3 hours at 1,900 ft. off bottom. It was completed for maximum potential of 3,000 bbl.

Bay Petroleum Co.'s No. 2-B Ridler, SE NW SE Section 1-11-18w, Burnett pool, had 3,000 ft. of oil in the hole at total depth of 3,506 ft. from Arbuckle lime topped at 3,501 ft. It was completed for maximum potential of 3,000 bbl.

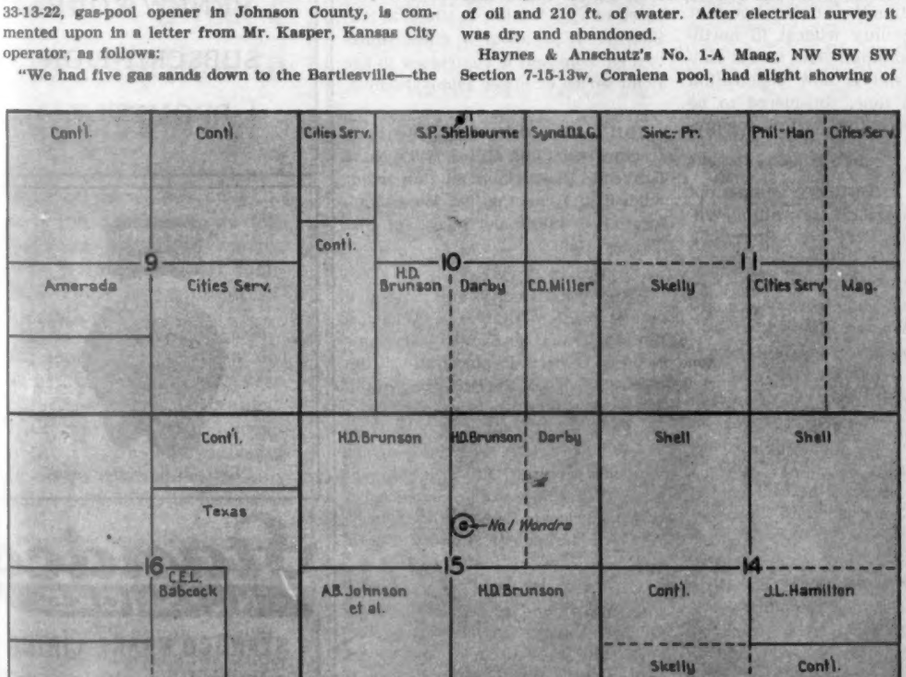
Earl Wakefield's No. 2 Burnett, E½ NW NE Section 1-11-18w, had Arbuckle lime at 3,518-20 ft., total depth, was treated with 4,000 gal. of acid and made maximum potential of 3,000 bbl. of oil.

Gulf Oil Corp.'s No. 3 Koerner, S½ NE SW Section 11-12-18w, Walter pool, found Arbuckle lime at 3,686-89 ft., total depth, swabbed 135 bbl. of oil with no water in 5 hours, and was given maximum potential rating of 3,000 bbl. of oil daily.

McPherson County

Westgate-Greenland Oil Co.'s No. 1 Chindberg, C N½ NE SE Section 18-18-1w, wildcat in McPherson County, once hailed as a potential pool opener, failed

(Continued on Page 62)



Midcontinent Map Co., Wichita

H. D. Brunson and others' No. 1 Wondra, Section 15-17-12w, wildcat south of the Odin pool, Barton County, sought deeper production after finding water in Kansas City lime at 3,049-80 ft. It had oil showing at 3,060-70 ft. and 3,120-25 ft., and a bailer of water an hour at 3,125-30 ft., total depth. Six-inch casing set at 3,060 ft. was being underreamed

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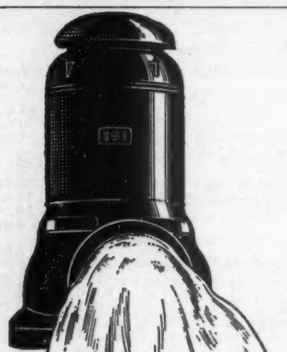

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Among the Drilling

WALTER G. RAY DRILLING CO. of Shreveport, La., has been awarded contract for drilling Oliphant Oil Co.'s No. 1 Rowe, that company's first operation in the Magnolia field of Columbia County, Arkansas.

ROWAN & HOPE, INC., drilling contractors of San Antonio, Tex., are drilling F. E. Courson and others' No. 1 L. J. Bailey, an important test in Jefferson Davis County, South Central Mississippi. The contractors will begin another Mississippi wildcat test when they spud about February 18, Robert P. Lake's No. 1 Exum estate, a Yazoo County test located several miles northeast of the Tinsley field.

PLAINS PRODUCTION CO. has contracted to drill No. 1 Mohanna, an Issequena County, Mississippi, wildcat for Tatum, Dunbar & Shaddock. This 6,000-ft. test is located on a 20,000-acre block on a seismograph high considered to be one of the more favorable prospects in the state.

RED IRON DRILLING CO. of Shreveport, La., has resumed with cable tools in G. C. Grasty's No. 1 Kentucky Lumber Co., important Itawamba County wildcat in northeastern Mississippi. The test is running high, and is now penetrating the Trenton lime, considered to be the best prospective horizon for production.

RYAN & ANDERSON, Mississippi drilling contractors, are drilling Wilmut Oil & Gas Co.'s No. 1 Roberts, a Monroe County wildcat near the Amory gas district of northeast Mississippi. The same contractors are drilling a Warren County wildcat, H. C. Hummings' No. 1 Morrisey.

LATEX DRILLING CO. is moving a rig from Longview, Tex., to Sharkey County, Mississippi, where it has contract to drill a 4,000-ft. wildcat for Eureka Petroleum Co. Operations are scheduled to begin February 1.

HELMERICH & PAYNE, INC., Tulsa, with Denver Producing & Refining Co., has staked a projected 5,500-ft. wildcat test in west central Hockley County, West Texas. It is about 15 miles north of the Slaughter pool and is on a block of acreage assembled by James H. Sullivan of Wichita Falls, Tex. The wildcat is No. 1 Whiteface Cattle Farms, SW¼ of Block 22, League 77, Abstract 199, Reeves County School Lands. Helmerich & Payne have started moving in material for immediate drilling.

MIDLAND DRILLING CO., Dallas, Tex., launching a drilling campaign for south end of the Foster pool, in Ector County, West Texas, has staked four new locations on its Henderson lease in Section 30, Block 42, T-2-S, T.&P. Survey. The company's most recent completion on the Henderson lease was the No. 3 which made 1,888 bbl. on 24-hour gage.

M. B. K. DRILLING CO., Odessa, Tex., and York & Harper, Midland, have jointly staked a mile east outpost to Ector County's Foster pool in the central basin area of West Texas. The operators located their No. 1 John M. Gist, 330 ft. from the south and west lines of Section 3, Block 42, T-2-S, T.&P. Survey.

RATHKE DRILLING CO., Wichita Falls, Tex., has been given contract for a 4,200-ft. rotary wildcat test in Stephens County, West Central Texas. Panhandle Producing & Refining Co. has staked its No. 1 Frank Magers, center of the southwest 40 acres of E½ Section 1, Block 3, S.P. Survey. It is about 5 miles southeast of Ivan and is contracted to the Bend series of lower Pennsylvanian.

JOHN R. BUNN, drilling contractor, is drilling Hill & Hill's No. 1 Kinkead Plantation, an important wildcat in Yazoo County, Mississippi located 6 miles northwest of the Tinsley field.

CRON & GRACEY are moving a rotary to the Hilje area, Wharton County, Texas, for Sam G. Harrison's No. 1 N. Carlson, located south of the discovery well of the Hilje field in the Morris & Cummings Survey.

J. W. FRAZIER received contract for Dick Schwab, Sturm, and Womack's No. 1 Foster, a projected 7,800-ft. wildcat located east of the town of Willis in Montgomery County, Texas.

ALLEN & MORRIS received contract from Standard Oil Co. of Texas for No. 1 A. B. Rodriguez, located northwest of the discovery well of the Sejita field in Duval County, Texas.

HOUSH & THOMPSON abandoned No. 1 Industrial Lumber Co., a wildcat located in the Ten Mile prospect in Allen Parish, coastal Louisiana. Total depth was 10,305 ft. In Montgomery

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The Oil and Gas Journal

Tulsa, Oklahoma

County the contractors' joint test with the West Conroe Oil Corp. is drilling in shale below 4,764 ft.

HELMERICH & PAYNE, INC., and others are drilling No. 1 Berry in NW SW SE Section 24-18-4e, northwest of Cushing in Payne County, Oklahoma. They set 7-in. at 3,657 ft., total depth 3,670 ft. Operators are preparing to rig up standard tools.

NICKLOS DRILLING CO. cemented 13⅜-in. surface casing in Continental Oil Co.'s No. 1 Bender estate, a projected 12,000-ft. wildcat located east of Spring in southern Montgomery County, Texas. Other active operations are located in the Villa Platte, Tepetate, Abbeville and Bateman Lake fields for Continental Oil Co. and Texas Co.

W. B. OMOHUNDRO, Wichita Falls, Tex., has received contract and is moving in rotary for a new 5,200-ft. wildcat in southeastern Wichita County, North Texas. It will be drilled for E. C. Harlin and associates of Wichita Falls as their No. 1 I. H. Kempner. Location is in the SE cor. Block 28, League 1, Denton County School Lands. Contract depth is the Caddo lime of the Bend series.

DELTA DRILLING CO., Tyler, Tex., is the contracting firm drilling one of eastern Texas' deepest wildcat tests. The test is for Shell Oil Co., Inc. and is its No. 1 Campbell, P. Lively Survey, Smith County. The location is about a mile north of Hunt Oil Co.'s discovery distillate well on the Chapel Hill structure. Production was from the deep Trinity series and Shell's wildcat is attempting to find oil production on the north flank of the large dome. The test was last reported drilling below 8,590 ft. or 10 ft. from its original contract depth of 8,600 ft. It is expected to be plugged back to a section in the Paluxy sand from 5,785 to 5,821 ft. which showed about 17,000,000 cu. ft. of gas daily while drilling. Only slight zones of porosity with little saturation have been logged in the drilling of this wildcat.

J. F. SMITH DRILLING CO., of Shawnee, Okla., is drilling a well in the North Shawnee pool of Pottawatomie County, Oklahoma, at No. 1 Hansen, in SE NE NW Section 24-11-4e, three locations west and one location north of Atlantic Refining Co. and others' No. 2 Netha-a-Pea-sa, which came in recently for the second oil well in the pool. The new start is considered a key test since it is far up toward a fault in the field said to run northeast and southwest.

SPRINGROSE DRILLING CO. and Central Petroleum Co. drilled No. 1 Joe Swanson, a wildcat strike in the C N½ NW NW Section 18-20-5w, discovery well in the North Bornholdt pool, of McPherson County, Kansas. The well has been completed for 1,383 bbl. of oil. It is 2½ miles north of the main Bornholdt pool.

Crew on Noble Drilling Co.'s rig at Hastings, Tex.: Nat Janco, Reed Roller Bit Co.; Bill Shields, driller; J. V. Norberg; Jack Phelps; J. L. Howell

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Texas and Louisiana Gulf

By
NEIL WILLIAMS

Fannett Dome Deep Sand Shows Prolific Production

HOUSTON, Tex., Jan. 29.—Opening of prolific production from a deep sand on the northwest flank of the Fannett dome, Jefferson County, and the discovery of a distillate field in Wharton County, were the featured developments of a quiet week in the Gulf Coast district. Many wildcats were closed down due to subfreezing temperature which has extended over the southern area during the past 7 days.

Gulf Oil Corp. opened production from a deep sand on the northwest flank of the old Fannett dome, Jefferson County, with the completion of No. 2 Bordgages. Sand showing oil was topped at 8,238 ft., and cored to a total depth of 8,299 ft. Seven-inch casing was cemented on bottom, and the well was completed through perforated casing at 8,275-85 ft., for an initial production of 420 bbl. of 34.8-gravity oil in 12 hours, flowing through a ¼-in. choke. The well is located in the J. Probarth Survey, about 1,000 ft. northwest of the company's No. 1 Bordgages, completed as a distillate producer at approximately the same depth.

In the same county and in the Lovells Lake field, Humble Oil & Refining Co. defined production to the south as No. 1 Turner was abandoned at a total depth of 7,860 ft. The same company staked location for No. 1 Oswald estate, ½ mile west of production in the Michael Pevito Survey.

Southwest of Wharton, Wharton County, J. F. Hutchins opened a new gas and distillate area with the completion of No. 2 Borden. The well was drilled to 5,500 ft., and 5½-in. casing was cemented at 4,840 ft. Perforations were made opposite sand at 4,758-71 ft., and the well flowed a small amount of distillate and gas through a ¼-in. choke. Tubing pressure was 1,900 lb. The well is shut in, and a potential test was scheduled to be made this week.

Location for two important wildcats were made in Wharton County. Near the town of El Camp H. C. Cockburn and others' have derrick up for No. 1 F. T. Reitz, Section 59, E.T.R.R. Survey. Approximately 1½ miles south of the discovery well of the Hilje field Sam G. Harrison and others staked location for No. 1 Neil Carlson in the Morris and Cummings Survey.

In the Anchor field Humble Oil & Refining Co.'s No. 1 Galaznik and Taylor, ½ mile southwest of the discovery well, topped the Marginulina at 8,198 ft., and is drilling in shale and lime below 9,302 ft. Northwest of the discovery well Glenn McCarthy is perforating casing at 9,400-06 ft., preparatory to testing No. 1 Salmon and Momma. Several tests made at intervals from 9,800 to 10,000 ft. showed gas, distillate, and water.

Two production tests of Fred Browning's No. 1 Socha, ½ mile southwest of the discovery well of the Rosenberg field, Fort Bend County, proved disappointing. The well was originally tested through perforated casing at 8,181-85 ft., and flowed gas and distillate for a short period before going to salt water. The perforations were squeezed off and the casing reperforated at 8,160-67 ft., where it is reported to have tested salt water.

Northwest of the above well Magnolia Petroleum Co. recompleted No. 1 Huntington through perforated casing at 8,179-84 ft., and the well flowed 22 bbl. of distillate through a ¼-in. choke. Tubing pressure was 175 lb. and casing pressure 200 lb.

In the Caplen field, Galveston County, Sun Oil Co.'s No. 2 Zinn and Foreman is being recompleted after it flowed dry gas when tested through perforated casing at 7,480-88 ft. The hole is bottomed at 7,550 ft., with sand showing oil and gas logged by an electrical survey at 7,210-20 ft., and 7,480-90 ft.

Northeast of the Cedar Point field, Chambers County, George Anderson's No. 1 Lawrence is shut down at a total depth of 7,215 ft. Frio was topped at 7,130 ft., and salt water was logged at 7,199 ft. Nine sidewall cores cut at 7,131-35 ft. showed sand with an odor of oil at 7,131-32 ft., while the balance carried salt water. No decision has been made as to whether casing will be cemented for a production test.

Sturm & Womack's No. 2 Foster estate, a Tertiary Wilcox test in the Willis area, Montgomery County, is temporarily shutdown at a total depth of 7,265 ft., and the well may be carried deeper before casing is cemented for a production test of a sand and sandy-shale section logged by an electrical survey at intervals from 6,712 to 6,841 ft. The top of the Wilcox formation was topped at 6,712 ft., and the section was logged as a gas and distillate section, although the operators are of the opinion that the lower section may carry oil. In the same county and east of the town of Willis, Dick Schwab, Sturm and Womack let contract for another Wilcox test located on the Foster estate in Lot 39, in the De La Garza Survey. Contract depth is 7,800 ft.

Another Wilcox test which is attracting attention is W. R. Davis & Co.'s No. 1-A McLane, in the Garwood area, Colorado County. This well failed to flow when swabbed through perforations at intervals at 10,330 to 10,438 ft., and the company is reperforating casing at 9,960-80 ft. A thick section of sand and sandy shale was logged in the well, but the sand is reported to have shown little porosity.

In the West Ranch field, Jackson County, George Greer's No. 3 Ward, extreme east side of the field, tested salt water in the 5,700-ft. sand and the hole has been plugged back for a production test in the 5,500-ft. horizon. On the north side of the field, Superior Oil Co.'s No. 1 Seidel and Simon is fishing for drill pipe at a total depth of 6,321 ft. This is the deepest test drilled in this portion of the field.

Louisiana Coast

Along the Louisiana coast and located in the Barataria field, Jefferson Parish, Gulf Oil Corp.'s No. 1 Rathborne Land Co., a south offset to the discovery well, topped sand showing oil at 8,200 ft., and 7-in. casing is being cemented for completion at a total depth of 8,210 ft. The discovery well, California Co.'s No. 1 Adams Ruttley, was drilled to a total depth of 12,222 ft., and was completed through perforated casing at 8,204-14 ft.

On the Bay Brussell prospect, La Fourche Parish, Tide Water Associated Oil Co.'s No. 1 Delta Farms was drill-stem tested through perforated casing at 11,270-80 ft., and recovered 85 stands of oil and 5 per cent salt water in 27 minutes. Gravity of the oil tested 31.4. The hole has been plugged back to 8,950 ft., and a squeeze job will be made to eliminate the salt water.

Tertiary Wilcox Failure

Republic Production Co.'s second attempt to open Wilcox production in the Bancroft field, Beauregard Parish, failed as No. 4 Lutcher Moore Lumber Co. was plugged back to complete in the Cockfield sand at 7,300 ft., after testing salt water on a drill-stem test at 9,873-10,019 ft.

In the Grand Lake field, Cameron Parish, Superior Oil Co.'s No. 6 State, perforated casing at 8,370-82 ft., and was completed for an initial production of 357 bbl. of oil daily flowing through a 12/64-in. choke.

Shell Oil Co., Inc.'s No. 1 Lebermuth and Israel, La Pice field, St. James Parish, perforated casing at 11,340-55 ft., and the well flowed 12 bbl. of distillate in 8 hours through a 12/64-in. choke. Tubing pressure was 4,750 lb. and casing pressure 1,750 lb. The completion opens the second producing horizon for the structure both of which produce distillate. The discovery well, No. 1 Schexnayder, was completed through perforated casing at 10,910-75 ft.

Housh & Thompson's No. 1 Industrial Lumber Co., located on the Ten Mile prospect, Allen Parish, topped the Wilcox formation at 10,285 ft., and the hole was abandoned at a total depth of 10,305 ft.

TEXAS GULF COAST COMPLETIONS IN PROVEN FIELDS

Brazoria County

Hastings field: Stanolind Oil & Gas Co.'s No. 20-C Moore, sand 6,119-23 ft., 33 bbl., jetting. Stanolind Oil & Gas Co.'s No. 8 Ware, sand 6,097-6,110 ft., 432 bbl., 18 hours, ¼-in. choke. Old Ocean field: Sun Oil Co.'s No. 3 Borsodi, perforated casing 10,105-37 ft., 281 bbl., ¼-in. choke. West Columbia field: Texas Co.'s No. 92 Hogg, sand 2,953-3,001 ft., 368 bbl., ¼-in. choke.

Chambers County

Anahuac field: Humble Oil & Refining Co.'s No. 22 Gripon, 7,112 ft., 552 bbl., ¼-in. choke. Cotton Lake field: Salt Dome Oil Corp.'s No. 2-B Lawrence, 6,485 ft., dry and abandoned. Turtle Bay field: Stanolind Oil & Gas Co.'s No. 1 Hill, sand 6,624-31 ft., 127 bbl., ¼-in. choke.

Fort Bend County

Thompson field: H. M. Naylor's No. 8-B Gehr, 8,406 ft., dry and abandoned. Gulf Oil Corp.'s No. 3 Wolters, sand 5,391-5,437 ft., 125 bbl., ⅛-in. choke. Humble Oil & Refining Co.'s No. 23 Davis, sand 5,395-5,410 ft., 517 bbl., ¼-in. choke. Quintana Petroleum Corp.'s No. 2-B Ware, 5,470 ft., 354 bbl., ¼-in. choke.

Galveston County

League City field: Phillips Petroleum Co.'s No. 1 Brittnacher, perforated casing 8,712-17 ft., 156 bbl., ⅛-in. choke.

Harris County

Clear Lake field: Humble Oil & Refining Co.'s No. 2-D Humble-West, 5,841 ft., gas well. Humble Oil & Refining Co.'s No. 33 Beamer, sand 6,027-43 ft., 537 bbl., ¼-in. choke. Humble Oil & Refining Co.'s No. 22 West Production Co., sand 6,035-45 ft., 536 bbl., ¼-in. choke. Pierce Junction field: Gulf Oil Corp.'s No. 44 E. R. Taylor, 6,448 ft., dry and abandoned.

Jackson County

Francitas field: Skelly Oil Co.'s No. 1 Thatcher, 7,977 ft., dry and abandoned.

Jefferson County

Lovells Lake field: Humble Oil & Refining Co.'s No. 18 Broussard, 7,780 ft., 184 bbl., ⅛-in. choke. Humble Oil & Refining Co.'s No. 1 Turner, 7,860 ft., dry and abandoned.

Matagorda County

Van Vleck field: Skelly Oil Co.'s No. 1 Whitfield, 9,300 ft., dry and abandoned.

Polk County

Segno field: Humble Oil & Refining Co.'s No. 20-B Kirby Lumber Co., sand 8,124-95 ft., 463 bbl., ¼-in. choke.

Orange County

Port Neches field: Texas Co.'s No. 17 Kuhn, sand 5,897-5,930 ft., 138 bbl., ⅜-in. choke.

Tyler County

Spurger field: Republic Production Co.'s No. 30 fee, perforated casing 7,692-7,708 ft., 198 bbl., ¼-in. choke.

Wharton County

Magnet field: McDannald Oil Co.'s No. 1 Debruhl, sand 5,507-49 ft., 103 bbl., ⅛-in. choke. Withers field: Texas Co.'s No. 16-A Thompson, sand 5,542-44 ft., 99 bbl., ⅛-in. choke.

Oklahoma Operations

By DAL DALRYMPLE

Ramsey Pool New Producer; Another Deep Washita Test

The Ramsey pool in Payne County and the Billings pool in Noble County provided the two larger producing oil wells completed in Oklahoma the past week. The Ramsey well, first to be completed in that area in several weeks, was Mid-Continent Petroleum Corp. and others' No. 13 Ramsey, C S½ N½ NW Section 18-18-2e. Wilcox sand was topped at 4,742 ft., total depth 4,755 ft., with 4½ ft. of good saturation found in a 6½-ft. core. It was washed in last Sunday, flowing 257 bbl. of oil the first hour, with 3,880,000 cu. ft. of gas, and 225 bbl. of oil, with 3,500,000 cu. ft. of gas, the second hour. It was given 24-hour potential rating of 5,792 bbl. The well was shut in but was to be put on production right away. Location is on the northeast side of the field.

Another big Wilcox-sand producer was near completion at Hilton Phillips, Inc.'s No. 1-A Bettis, SE SE SW Section 21-7-4, St. Louis field, Pottawatomie County. Wilcox sand was found at 4,312-18 ft., total depth, and it swabbed 76 bbl. of oil an hour for 4 hours after plugs were drilled. When the hole was cleaned volume of oil increased and on 24-hour test it averaged 103 bbl. an hour, or 2,472 bbl. a day. It is the largest of several big Wilcox-sand producers to be completed in that sector of the St. Louis district in recent months.

Another attempt to find deep production in Washita County is to be made by Continental Oil Co. Location was announced for the company's second deep test on its big western Oklahoma lease block at C NE¼ Section 16-8-16w, southeast of the town of Cordell. It is planned to seek production in Simpson zone, or around 10,000 ft. Work was due to start within the next month. Location is southeast of the company's No. 1 Proctor, C NW¼ Section 28-10-20w, recently abandoned at total depth of 14,582 ft.

Wildcat Operations

Sinclair Prairie Oil Co.'s No. 1 Ward, SE SE SE Section 30-7-1e, Cleveland County wildcat, drilled to 8,322 ft., total depth, plugged back and ripped casing, the hole filled with water and it was abandoned. First Wilcox sand was found at 6,793 ft., second sand 6,802-7,015 ft., and Arbuckle lime at 7,700 ft.

A. S. Kaplan's No. 1 Anthis (Mills), NW NW SE Section 12-15-9, wildcat in Creek County, had a hole full of water in Wilcox sand at 3,400-06 ft., total depth, and was abandoned.

W. H. Atkinson's No. 1 Wilkerson, NW NE NW Section 14-22-4, Pawnee County wildcat, found lime at 3,615-20 ft., total depth, and was dry and abandoned.

Villines' No. 1 Church, SE SE SE Section 36-7-5, wildcat location in Seminole County, was abandoned.

New wildcats: Brookshire's No. 1 Jones, SW SW NW Section 29-3s-12e, about 10 miles southeast of the town of Atoka, in Atoka County, moving in material; Harper-Turner's No. 1 Mann, NW NW SE Section 23-14-5, west of Sac and Fox pool, Lincoln County, cellar and pits; Summit Drilling Co.'s No. 1 Cleer, C W½ SE SW Section 6-15-5, northwest of Kendrick, Lincoln County, location; H. N. Greis, trustee, Deep Rock Oil Corp. and Helmerich & Payne, Inc.'s No. 1 Kramer, NW NW SE Section 24-17-1e, Logan County, south of the Coyle pool, on a Texas Co. farmout, rig on ground; Alma Oil Co.'s No. 1 Rogers, CNL NW SE Section 36-5-8w, east of Chickasha gas field, Grady County, location; Phillips Petroleum Co.'s No. 1 Grape, C NW SE Section 30-18-5w, Kingfisher County, west of the Lovell pool, building rig.

Noble County

Phillips Petroleum Co.'s No. 65 Billings unit, NW SW SW Section 22-23-2w, Billings field, Noble County, was the largest Oklahoma producer completed the past week. It found Simpson zone at 4,315 ft., Wilcox sand 4,320-50 ft., total depth, set 7-in. casing at 4,317 ft., and made daily potential of 2,788 bbl. of oil.

Logan County

Sinclair Prairie Oil Co.'s No. 2 Frederick, C S½ SE NE Section 33-20-2w, an old well in the Logan County extension of the Lucien field, was plugged back from 5,117 ft. to 4,860 ft., ripped casing, and flowed 30 bbl. of oil daily through tubing, with 2,000,000 cu. ft. of gas.

Garfield County

A small producer was completed in the Brown pool, Garfield County, at Hughes' No. 1 Looman, NE NE SE Section 9-20-4w. It entered Mississippi lime at 5,492 ft., set 7-in. casing at 5,445 ft., was bottomed at 5,519 ft., acidized and produced 10 bbl. of oil daily.

Oklahoma County

Kerlyn Oil Co.'s No. 1 Bradley, NE SE SW Section 27-12-3w, Oklahoma City field, Oklahoma County, entered Wilcox sand at 6,500 ft., was bottomed at 6,567 ft., and set 7-in. pipe at 6,450 ft. It was shot and pumped 898 bbl. of oil in 24 hours.

Okfuskee County

Parker's No. 1-A King, NE NE SW Section 2-11-8, Dill pool, Okfuskee County, penetrated Cromwell sand at 3,368-3,410 ft., total depth 3,431 ft.; was shot and pumped 35 bbl. of oil and 220 bbl. of water in 24 hours.

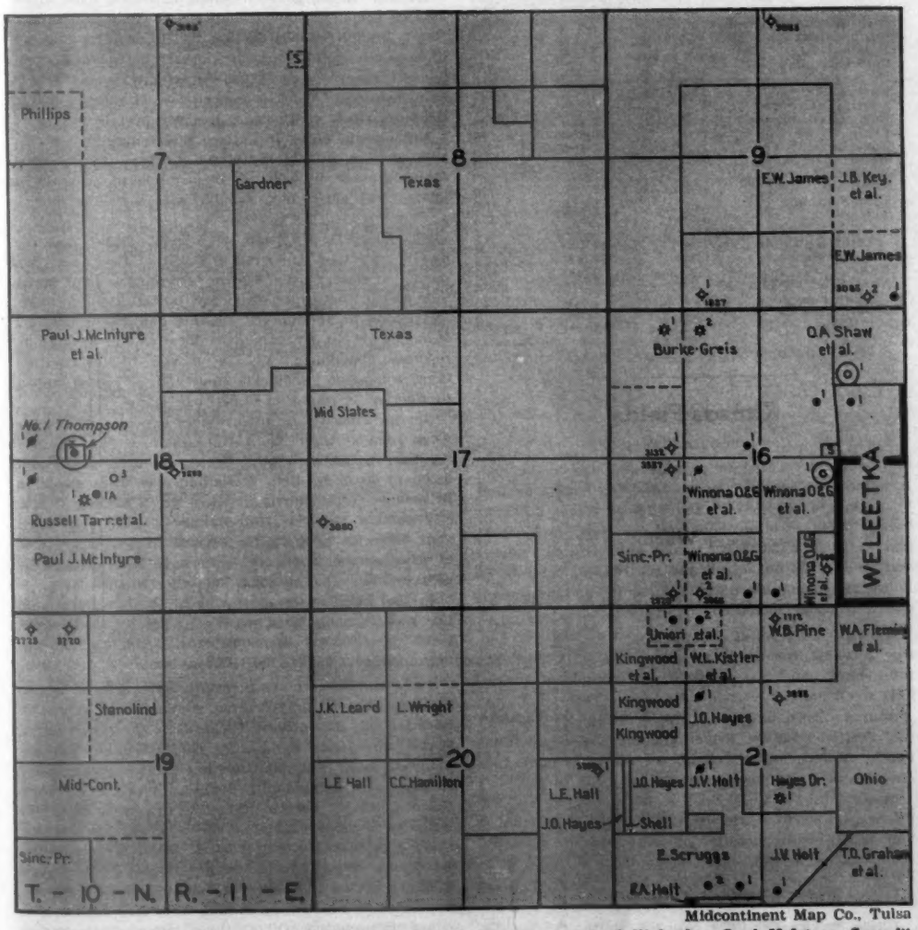
New work in Okfuskee County: Summit Drilling Co.'s No. 1 Skimmer, SW SE NW Section 18-10-11, location; Decius' No. 1 Shawneego, NE NE NE Section 25-10-11, location; Parker's No. 2 Wilty, NW SW NE Section 2-11-8, location; Panther Oil Co.'s No. 7-A Sebastian, SE SE NE Section 11-11-11, shut down at 500 ft.; Smith's No. 4-A Lavin, CWL NW NE Section 26-11-11, location.

Seminole County

Deep Rock Oil Corp.'s No. 1 Reed, NW NW SE Section 6-6-8, Fish pool, Seminole County, found dolomite at 4,173 ft., Wilcox sand 4,238 ft., total depth 4,243 ft., was acidized and pumped 20 bbl. of oil and 480 bbl. of water in 24 hours.

Cities Service Oil Co.'s No. 2 Fish B, NW NE SE Section 19-7-8, an old well, was deepened from 3,127 ft. to dolomite at 4,122 ft., Wilcox sand 4,193-97 ft., total depth, and swabbed 244 bbl. of oil and 396 bbl. of water in 21 hours. It was plugged back to 4,161 ft., perforated casing, acidized, and pumped 122 bbl. of 38-gravity oil, with no water, in 24 hours.

R. Olsen's No. 1-A Burton, SE NW SW Section 28-9-6,



Midcontinent Map Co., Tulsa

Considerable activity seems assured for the Okfuskee County area west of Weleetka. Paul McIntyre, Summitt Drilling Co. and others' No. 1 Thompson, Section 18-10-11, is a new producer. Tests are being started nearer Weleetka in Section 18-10-11 by Doak & Hughes and Winona Oil & Gas Co.

had water in the hole at total depth of 2,632 ft., and was abandoned.

Vierson's No. 1 Swan, NW SE NW Section 28-6-6, was dry and abandoned in dolomite at 3,736-60 ft., total depth.

Culver and others' No. 1 Whitney, NE NE NW Section 10-5-5, was a rig.

Pottawatomie County

Deep Rock Oil Corp.'s No. 1 Mickish, NW NW SW Section 36-10-4, West King pool, Pottawatomie County, found Wilcox sand at 4,560-70 ft., total depth, plugged back to 4,299 ft., acidized, pumped 271 bbl. of oil and 170 bbl. of water in 24 hours, then pumped 263 bbl. of oil and 170 bbl. of water.

Denver Producing & Refining Co.'s No. 2 Ray, NE SW NE Section 2-6-4, an old well in the St. Louis district, was deepened from 4,030 ft. to Wilcox sand at 4,313 ft., total depth 4,353 ft., had a hole full of water and plugged back to 4,298 ft. Casing was perforated, acid applied, and it pumped 125 bbl. of oil and 1,550 bbl. of water in 24 hours.

Pontotoc County

Gulf Oil Corp.'s No. 1 Watson, SE NW NE Section 35-5-4, Bebee pool, Pontotoc County, found Viola lime at 2,359 ft., total depth 2,550 ft., was acidized and pumped 595 bbl. of 37.7-gravity oil in 24 hours.

Lake Oil Co.'s No. 1 Anderson, NE NE SE Section 35-5-4, was rigging up rotary.

In Hughes County Manahan Oil Co.'s No. 1 Mullie A, SW SW NE Section 23-6-8, was bottomed at 1,400 ft., plugged back to 750 ft., and was waiting on casing.

Creek County

Tribbens' No. 1 Allen, CSL SW NE Section 1-15-9, Bristow district, Creek County, penetrated Dutcher sand at 2,804-52 ft., Wilcox sand 3,359-60 ft., total depth, the hole filled with water, and it was plugged back to 2,865 ft., and shot. It pumped 22 bbl. of 31-gravity oil in 24 hours.

Link Oil Co.'s No. 8 Haggard, SE NW NE Section 33-18-7, Drumright area, found Layton sand at 1,392 ft., was shot at 1,405-78 ft., total depth, and produced 35 bbl. of oil daily.

Green's No. 1 Willibey, SW SW SW Section 6-17-10, was an abandoned location.

Chapman's No. 3 McNac, SE SW SE Section 35-15-10, had dug cellar and pits. Warren's No. 1 Sewell, NE SE SW Section 35-15-10, was a location. Sinclair Prairie Oil Co.'s No. 40 Dacon, CNL SE SE Section 16-17-7, was location for a twin well.

Pawnee County

Jackson's No. 1-A Besser, SE SW SE Section 24-20-9, Keystone district, Pawnee County, had sand at 1,125-80 ft., total depth 1,270 ft., was shot and pumped 7 bbl. of oil in 24 hours.

Sand Springs Home's No. 1 Stewart, SW SW SE Section 10-20-7, was dry and abandoned in Wilcox sand at 2,970-90 ft., total depth.

Johnson Oil Refining Co.'s No. 13 Findley, CWL NE NE Section 27-20-9, was rigging up machine. Haynes' No. 1 Elmore, NE NW NE Section 9-20-9, was drilling below 663 ft.

In Lincoln County Wilcox Oil & Gas Co.'s No. 1 State B, SE SW SW Section 16-14-6, Sac and Fox pool, was building rig.

Caddo County

George Pace's No. 1 Davis, NW SE NW Section 6-5-9w, Cement field, Caddo County, set 7-in. pipe at 3,284 ft., with base of sand at 3,303 ft., total depth 3,305 ft., and pumped 30 bbl. of 35-gravity oil in 24 hours.

Ray Stephens, Inc.'s No. 1 Rector, SW SW SE Section 15-6-10w, mudded hole at total depth of 5,177 ft., and was temporarily abandoned.

Johnson's No. 1 Kahle, SE SW NW Section 3-5-9w, was rigging up rotary tools.

In Stephens County George Pace's No. 3 Parker, NW SE SE Section 11-2s-8w, rigged up rotary tools and shut down.

Jackson-Comanche Counties

Vaughn's No. 2-B Cole, NE SE NW Section 3-1n-20w, Altus area, Jackson County, set 7-in. casing at 1,410 ft., was bottomed at 1,717 ft., and pumped 6 bbl. of oil daily.

An oil well and two failures were completed in the Lawton area, Comanche County. Carl Carter's No. 4 Johnson, NE SE SW Section 26-2n-11w, pumped 4 bbl. of oil daily from sand at 218-30 ft., total depth. Creel's No. 6 Johnson, SE NE SW Section 26-2n-11w, was dry and abandoned at 250 ft., total depth. McKee's No. 4-A Truitt, NW SW SE Section 26-2n-11w, was dry and abandoned at 245 ft., total depth.

Gulf Oil Corp.'s No. 9 Boucher, NE SE SW Section 32-1n-19w, Jackson County, was a location.

Carter County

Gulf Oil Corp.'s No. 2 McClure, C SE NE Section 28-2s-3w, an old well in the Fox pool, Carter County, was plugged back from 7,930 ft. to 5,548 ft., swabbed 231 bbl. of oil in 12 hours and swabbed down. It was acidized, flowed 316 bbl. of oil net in 10 hours, and later flowed 217 bbl. of oil in 24 hours, through ¼-in. choke.

Johnson's No. 23 Davis, SE NE SW Section 6-4s-3w, Healdton field, was bottomed at 1,190 ft., plugged back to 1,187 ft., pumped 25 bbl. of oil and 7 bbl. of water initially, and then pumped 15 bbl. of oil and a trace of water daily.

Estimated Daily Production

Estimated daily production for Oklahoma for the week ended January 27, and for the preceding week was as follows:

	Barrels	
	Jan. 27	Jan. 20
Allen	5,975	6,125
Billings	6,600	6,350
Burbank	7,300	7,150
South Burbank	8,775	8,450
Balance Osage	17,000	17,500
Blackwell district	3,725	3,750
Bristow-Slick	6,375	6,325
Chandler	1,450	1,425
Crescent	2,350	2,375
Cromwell	2,950	2,875
Cushing-Shamrock	9,650	9,625
Duncan	3,725	3,750
Edmond	4,575	4,625
Fish	3,475	3,850
Fitts	19,400	20,550
Jesse	2,225	2,250
Graham-Fox	1,950	2,200
Gray	800	750
Healdton	8,875	9,075
Hewitt	3,725	3,925
Keokuk	3,150	3,050
Konawa	1,275	1,225
Lucien	8,425	8,475
Moore	2,150	2,250
Oklahoma City	100,100	103,000
Olympic	2,550	2,550
Ramsey	4,975	5,250
Sasakwa	1,750	1,775
Sholem-Alechem	2,875	2,975
Seminole district:		
Bowlegs	7,550	7,125
Carr City	2,475	2,400
Dora	2,375	2,550
Earlsboro	4,600	4,425
South Earlsboro	575	550
East Earlsboro	2,250	2,250
Little River	6,850	6,725
East Little River	725	725
Maud	700	650
Mission	1,275	1,275
Seminole	7,525	7,300
East Seminole	1,125	1,150
Searight	2,375	2,275
Total Seminole	40,400	39,400
St. Louis-Pearson	34,500	35,100
Tatums	2,000	2,150
Tonkawa-Garber-Thomas	4,075	4,075
Wewoka	1,600	1,625
Yale-Jennings	3,550	3,575
Other pools	95,850	93,025
Total Oklahoma	430,125	432,425

Kansas Fields

(Continued from Page 57)

to perform according to promise and was abandoned. It topped Mississippi lime at 2,763 ft., had saturation in cuttings at 2,781-83 ft. and 2,785-88 ft.; at 2,795 ft., bailed 10 bbl. of oil an hour and salt water in 3 hours; had water at 2,828-58 ft., total depth. It was acidized and pumped 33 bbl. of oil and 100 bbl. of water in 12 hours after plugging back to 2,795 ft., and was abandoned as water increased.

Ohio Oil Co.'s No. 1 Peterson, C W½ NW SW Section 29-20-5w, Bornholdt area, had chat at 3,350-85 ft., total depth, and was acidized and completed for 56 bbl. of oil daily.

Sunray Oil Co. and others' No. 3 Briggs, C W½ NW NW Section 29-20-5w, drilled chat at 3,347-83 ft., total depth, flowed 50 bbl. of oil an hour through 1-in. choke, and made bomb potential of 3,803 bbl.

Continental Oil Co.'s No. 1-A Bornholdt, C E½ NE SE Section 30-20-5w, flowed 497 bbl. of oil in 8 hours and made bomb potential of 5,717 bbl. of oil daily, from chat at 3,343-85 ft., total depth.

Stafford County

Cities Service Oil Co.'s No. 2-B Smith, Section 16-21-11w, South Snider pool, Stafford County, found Arbuckle lime at 3,403-17 ft., total depth, and pumped 148 bbl. of oil and 35 per cent water in 24 hours.

Landon & Estes' No. 1 Equitable, E½ NE NE Section 15-24-11w, Zenith field, Stafford County, had Misener sand at 3,776-3,816 ft., total depth, was acidized, flowed 50 bbl. of oil in 2 hours and made bomb potential of 798 bbl.

Rice County

Frank Hollow and others' No. 4 Stout, C N½ SW NE Section 6-18-10w, Bloomer field, Rice County, had Arbuckle lime at 3,218-24 ft., total depth, and was completed maximum allowable potential of 3,000 bbl. of oil.

Schneider & Pulse and others' No. 1 Gum, E½ NE SE Section 34-19-10w, Silica field, pumped 180 bbl. of oil in 12 hours and made depthograph potential of 845 bbl. Gravity of the oil was 42°. Production was from Arbuckle lime at 3,284-90 ft., total depth.

Butler County

Adair & Morton's No. 2 Ramp, NE NW NW Section 23-28-7, Brandt area, Butler County, drilled Mississippi lime at 2,668-91 ft., total depth, was acidized and pumped 40 bbl. of oil daily.

Simpson Oil Co.'s No. 4 Steinhoff, C S½ SE SE Section 21-29-6, had Kansas City lime at 2,025-2,181 ft., total depth 2,755 ft., and pumped 25 bbl. of oil daily.

New Operations

Foster Oil Co. and others' No. 2 Howard, C E½ SW SW Section 8-34-4, wildcat in Cowley County, was a cellar. Shell Oil Co., Inc.'s No. 1 Froye, NE SE NE Section 33-25-8w, Reno County wildcat, was a cellar. G. A. Fuller's No. 1 Stilt, C S½ SE NE Section 21-27-1w, wildcat in Sedgwick County, was moving in material.

Barton County: Skelly Oil Co.'s No. 3 McGuire, C S½ SE NE Section 34-19-10w, building rotary rig; Bodine Drilling Co.'s No. 1 Herter, C N½ NW SE Section 8-20-11w, building rotary rig.

Forest City Basin Activity

PAOLA, Kans., Jan. 29.—Gene C. Helm, Paola operator, is preparing to move in rig at Helm and others' No. 1 Julian, NE NE Section 9-11-19, wildcat about 8 miles south of Oskaloosa in southern Jefferson County, in the Kansas sector of the Forest City basin. It will be a deep test. Work is expected to be started within the next week or 10 days, weather permitting.

McLaughlin Sons, Inc.'s No. 1 McLaughlin, SW NE NW Section 4-10-20, Jefferson County wildcat that found around 6,500,000 cu. ft. of gas in Bartlesville sand, continued to have trouble with a fishing job.

ST. JOSEPH, Mo., Jan. 29.—F. C. Miller and the newly organized American Oil & Gas Corp. are preparing to start a deep wildcat test southwest of Maysville and in the Amity district of DeKalb County, exact location to be announced. Drilling equipment used by Miller at his No. 1 Corrough, wildcat east of St. Joseph, recently abandoned, will be moved to the DeKalb County location. Arbuckle lime will be tested unless production is found in upper pay zones.

George Vincent and others were expected to resume work soon at their No. 1 Dillingham, C N½ NE SW Section 16-53-34w, Platte County wildcat, now shut down at 1,025 ft. Brin & Nathan also were expected to resume work shortly at their No. 1 Decker, C NW NW Section 1-61-38w, Holt County test that has been shut down at 1,030 ft. for several weeks. Operations at other northern Missouri tests have been delayed by cold weather, fishing jobs and other difficulties.

In the Iowa sector of the basin Phillips Petroleum Co. was running 10-in. casing at its No. 1 Creston, C SE NE Section 31-71-30w, Union County. It was bottomed at 1,680 ft. in Hunton lime.

Snow and subzero temperatures have delayed operations in the Falls City area, southeastern Nebraska. Location of the newest Richardson County wildcat, Forest City Basin Syndicate's No. 1 Windle, was announced as C NW NW Section 11-1n-5e, where rig corners were being built. Paynee Royalty Co.'s No. 1 Boice, C NE NE Section 18-1n-16e, Falls City discovery well, continues producing about 100 bbl. of oil daily. Same operators' No. 2 Meyers, C NW NW Section 24-1n-15, was thought to be drilling around 3,000 ft., and it was rumored that lower formations were thinning. Operators withheld information, however. Indian Territory Illuminating Oil Co. was reported leasing in Richardson County, and that company and Phillips Petroleum Co. were continuing seismograph exploration in the county.

California Field Report

By
L. P. STOCKMAN

Operators Asked to Restrict Drilling and Crude Output

LOS ANGELES, Calif., Jan. 29. — Maximum allowable production of wells in the top brackets in California may be reduced to or below 135 bbl. daily by the end of 1940 if operators continue to drill and complete wells at the prevailing rate. Therefore a subcommittee of the Central Committee of California Oil Producers after an exhaustive survey has recommended that a concerted attempt be made to restrict drilling operations. The committee did not recommend any action on the drilling of new wells or deepening of producing wells when (1) oil and gas leases call for work; (2) offset requirements demand drilling because of competitive wells on adjoining acreage and (3) where drilling is necessary because of the drainage factor. Recognizing the necessity of maintaining adequate reserves of crude oil, the committee recommended that no action be taken with reference to prospecting work. The survey recently completed by the subcommittee indicated that many of the wells drilled and completed in 1939 were unnecessary and that there is no reason why some wells projected for 1940 can not be delayed until 1941.

One of the most significant things brought out was the fact with few exceptions the new production as a result of completions during 1939, did not materially increase total production, as each barrel of new production added was offset by the reduction of the allowable of previous completions in order to keep production in balance. This unnecessary drilling resulted in a large expenditure of money which produced no tangible results as far as actual production was concerned. The concerted effort to restrict drilling during 1940 is necessary in order to stabilize curtailment because the resistance point is approaching. Umpire Pemberton has been instructed by the Central Committee to check all new wells and ascertain, as far as possible, the advisability of such work and also to ascertain the number of wells proposed to be deepened in 1940. Since California has no regulatory legislation, it will be necessary to secure the cooperation of operators in the movement to reduce drilling.

The situation in the Montebello field will receive careful attention, as it is believed probable that deeper drilling will get under way early this summer. If this projected deepening program can be forestalled Montebello operators will have accomplished what at present appears to be remote possibility.

Wilmington

The Wilmington field of Los Angeles Basin headed the completion list in the past week by yielding six new wells that showed an aggregate initial daily production of 2,327 bbl. Union Pacific Railroad Co.'s No. 21-E was brought in flowing 1,323 bbl. of 25.3-gravity oil per day from an effective depth of 3,884 ft. It had been drilled to 3,965 ft., but when a faulted zone was encountered below 3,884 ft. the well was plugged back. Perforations opposite the productive zone were at 2,825-2,981 ft., 2,996-3,130 ft., 3,145-97 ft., 3,210-3,373 ft., 3,426-3,502 ft., 3,517-80 ft., 3600-74 ft., 3,694-3,739 ft., and at 3,754-3,879 ft.

Union Pacific's No. 125 Harbor was brought in flowing 211 bbl. of 17.1-gravity oil per day from the Ranger zone with bottom of the hole at 3,588 ft. Perforations were at 2,891-2,999 ft., 3,049-92 ft., 3,334-3,485 ft., and at 3,525-85 ft. Production is flowing through 2,865 ft. of 3-in. tubing. General Petroleum Corp., discoverer of the Wilmington field, completed No. 36 Harbor flowing 320 bbl. of 17.7-gravity oil from the Ranger zone through a 32/64-in. bean behind a tubing pressure of 350 lb. and a casing pressure of 750 lb. Bottom of the hole is at 2,945 ft.

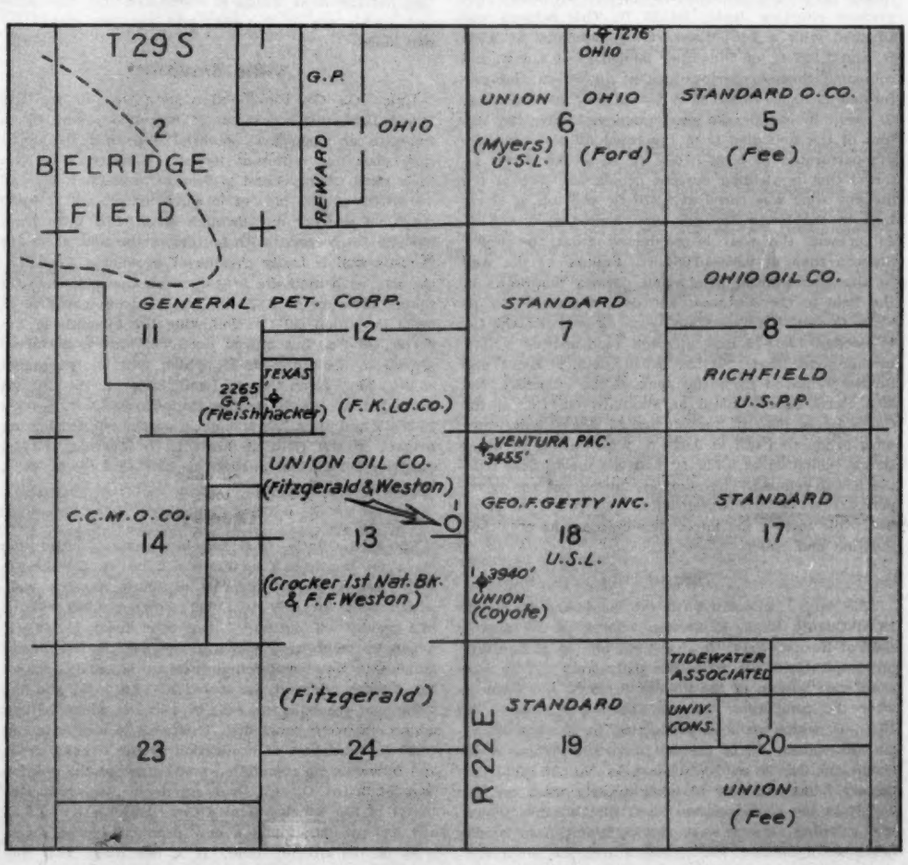
Hamarson Oil Co. secured its first production in the Wilmington field when No. 1 Harbor was completed flowing 175 bbl. of 15.9-gravity oil per day from the Ranger zone with bottom at 3,414 ft. and perforations at 3,120-3,414 ft. No. 3 Harbor of Interstate Investment Corp., southwest of Pico and Anaheim Boulevard, was completed flowing 198 bbl. of 15.7-gravity oil per day from the Ranger zone with bottom of the hole at 3,210 ft., and flowing through a 27/64-in. bean, which indicates that it is capable of greatly exceeding its initial production. Perforations were made at 2,880-3,210 ft. No. 1 Meeker of North Wilmington Oil Co., northeast of Broad and Denni Streets, pumped 100 bbl. of 16.1-gravity oil, cutting 2 per cent, from the Ranger zone with bottom of the hole at 3,650 ft. It was originally intended to complete the hole with a 5½-in. liner, but the 970 ft. of 5½-in. froze at 3,545 ft., which left perforations at 2,600-2,805 ft., 2,850-2,960 ft., 3,005-3,100 ft., and at 3,267-3,545 ft., and the company was forced to land 102 ft. of 3½-in. liner at 3,645 ft., which took care of the productive zone at 3,545-3,645 ft.

Montebello

Drilling operations continue to show a decline in Montebello, and for several weeks past the number of new wells started has fallen far below the number of completions during the same period. La Merced zone passed its peak production a few months ago and since most of the acreage is rather well drilled up it is assumed that development work will continue to decline. No. 1 Pedro of Crestline Petroleum Co. was finished flowing 515 bbl. of 36.3-gravity oil daily along with 1,200,000 cu. ft. of gas and No. 1 Prescott of Star Petroleum Co. was brought in flowing 312 bbl. of 36.1-gravity oil and 1,000,000 cu. ft. of gas daily. No. 1 Pedro was bottomed at 7,610 ft. in La Merced zone and finished with a 7-in. water string cemented at 7,462 ft. and 174 ft. of 4¾-in. liner landed on bottom and carrying 140-mesh perforations at 7,462-7,610 ft. No. 1 Prescott was finished in La Merced zone at 7,625 ft. with a 7-in. water string cemented at 7,500 ft. and 140 ft. of 5-in. liner landed at 7,621 ft. and carrying perforations at 7,500-7,620 ft. Both of these new wells show the high gas-oil ratio prevailing in the west end of the Montebello field due to expanded gas cap which will reduce the ultimate production of crude oil.

Kettleman Hills

Standard Oil Co. completed three new wells in the Kettleman North Dome field in the San Joaquin basin and added 5,527 bbl. per day of new production. Two of these new wells were located in Section 17-22-18 and a third was in Section 27-22-18. The latter was No. 32-27-Q flowed 1,270 bbl. of 41.9-gravity oil and 5,800,000 cu. ft. of gas per day from the Temblor, with bottom of the hole at 7,800 ft. It flowed through



Union Oil Co. is starting a wildcat southeast of the South Belridge field, Kern County, where a geophysical high is believed to have been found. A discovery in this area may lead to deep drilling within the existing shallow-zone confines of the Belridge field

a 40/64-in. bean and showed a tubing pressure of 950 lb. and a casing pressure of 1,500 lb. Perforations opposite the productive formation were at 6,728-6,801 ft., 6,998-7,053 ft., 7,178-7,216 ft., and 7,270-7,795 ft. Standard Oil Co. is running three strings of tools in Section 27-22-18 and is rigging up rotary drilling equipment in two additional wells.

The two wells completed in Section 17-22-18 were No. 76-17-Q completed flowing 2,375 bbl. of 38.6-gravity oil and 1,300,000 cu. ft. of gas per day from the Temblor at 8,145 ft., and No. 83-17-Q, which was brought in flowing 1,882 bbl. of 35.9-gravity oil and 1,100,000 cu. ft. of gas daily from the Temblor with bottom of the hole at 8,315 ft. Both wells were brought in flowing through 48/64-in. beans, the former showing a tubing pressure of 350 lb. and a casing pressure of 1,170 lb. and the latter showing 450 lb. pressure on the tubing and 1,320 lb. on the casing. Perforations opposite the producing horizon in No. 75-17-Q were at 7,567-7,610 ft., 7,690-7,800 ft., and at 7,850-8,140 ft. and 7,816 ft. of 2½-in. tubing was used to complete the job. In No. 83-17-Q perforations were at 7,402-7,528 ft., 7,758-7,821 ft., 7,880-7,901 ft., 7,952-8,015 ft., 8,039-80 ft., and at 8,212-8,312 ft. A total of 7,708 ft. of 2½-in. tubing was landed just previous to completion. Standard's crew on No. 27-19-J in Section 19-21-17 succeeded in recovering the fish that has been retarding progress for several weeks and the bit is at present rotating at 10,730 ft. This well is being carried down into the Eocene and should reach the pay within a short time. No. 72-19-J in the same section and another well that Standard is carrying down into the Eocene is still held up by mechanical trouble at 10,903 ft. and very little progress has been made in recovering the lost drill pipe during the past several weeks.

Cole's Levee

Tide Water Associated Oil Co. appears to have defined the southeastern limits of production in the Cole's Levee field of Kern County as No. 81 Kern County Land in Section 14-31-25 is finally being listed as a completion doing 195 bbl. of 31.2-gravity oil and 198,000 cu. ft. of gas daily through a 16/64-in. bean from 10,125 ft. This well, the most southeasterly in the field at present, was carried down to 10,934 ft. but failed to develop commercial production below the present effective depth, 10,125 ft. This outpost was finished with a 7-in. water string cemented at 9,941 ft. and 1,195 ft. of 5-in. liner landed at 10,813 ft. and cemented through perforations at 10,450 ft. and perforated at 10,583-10,813 ft. A test of this interval failed to result in commercial production and after the bottom of the hole had been cemented off the company gun-perforated at 9,986-10,084 ft. It is this latter interval that is yielding current production. Top of the Stevens zone was cored at 9,970 ft. and top of showings in the lower Stevens were logged at 10,606 ft. At present the well is producing from the upper Stevens zone at 9,986-10,084 ft. Failure of the well to show substantial production defines the limits of the field to the southeast and does not make No. 65 Kern County Land of Tide Water Associated Oil Co. in Section 13-31-25 look any too good as this well is farther east than No. 81 Kern County Land and farther removed from the apex of the structure. No. 20-3 Kern County Land of Standard Oil Co. in the Cole's Levee field in Section 9-31-25 flowed salt water on a production test at 9,934 ft. with an 8⅝-in. water string cemented at 8,725 ft. and too mechanical trouble has developed. The company tested out the lower perforations with a water witch and found no entry but while testing the upper perforations the crew lost the line and bailer.

Strand

Tide Water Associated Oil Co. completed No. 3-7-E Kern County Land, in Section 7-30-26, in the Strand field of Kern County, flowing 1,954 bbl. of 32.2-gravity oil and 1,540,000 cu. ft. of gas daily from the Stevens sand with bottom of the hole at 8,330 ft. Immediately after the completion test, the bean was reduced to 16/64-in. which reduced production to 192 bbl. of oil and 750,000 cu. ft. of gas per day. Tide Water Associated Oil Co. is ready to spud in No. 26-7-E Kern County Land and may also begin early work on No. 25-7-E in the same section. Shell Oil Co., Inc., which is developing acreage west of Tide Water Associated's holdings in Section 7-30-26 got a wet job on a test of No. 64-12-A Kern County Land in Section 12-30-25 at 8,970 ft. and the hole has been recemented. No. 64-12-A Kern County is a joint undertaking of Shell Oil Co., Inc., and Ohio Oil Co. with the former in charge of the drilling. On a 4-hour test this well flowed 139 bbl. of 32.4-gravity oil cutting 73.2 per cent along with 167,000 cu. ft. of gas. Bottom of the hole is at 8,970 ft. but a plug has been set, making the effective depth 8,734 ft. A 7-in. water string had been set at 8,200 ft. and 561 ft. of blank liner had been run in the hole and gun-perforated at 8,638-54 ft.

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	January 21		January 14			
	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Intercoastal-domestic—						
Fuel oil	30,260	4,323	.....	.....	30,260	61,980
Diesel and gas oil	.....	.....	.....	.....	.....	163,501
Gasoline	27,850	3,979	.....	.....	27,850	129,039
Foreign exports—						
Crude oil	292,080	41,726	73,657	10,522	467,460	425,345
Fuel oil	437,929	62,561	.....	.....	502,645	742,659
Diesel and gas oil	209,851	29,979	124,988	17,855	405,984	365,071
Gasoline	191,259	27,323	111,678	15,954	302,937	463,973
Kerosene	87,221	12,460	13,080	1,869	108,648	90,339
Coastwise-domestic—						
Crude oil	195,624	27,946	210,149	30,021	643,782	529,053
Fuel oil	307,181	43,883	200,165	28,595	846,468	487,144
Diesel and gas oil	76,013	10,859	39,436	5,634	190,661	178,500
Gasoline	208,909	29,844	243,188	34,741	742,263	656,910
Kerosene	11,159	1,594	18,677	2,668	40,643	9,942

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Diesel and gas oil	.....	.....	69,985	9,998	69,985	.....
Lubricants	.....	.....	3,610	516	3,610	.....
Foreign exports—						
Crude oil	.....	.....	43,120	6,160	43,120	139,553
Fuel oil	30,182	4,312	29,694	4,242	90,038	16,692
Diesel and gas oil	.....	.....	22,476	3,211	50,625	3,986
Gasoline	.....	.....	175,958	25,137	175,958	50,507
Kerosene	.....	.....	7,180	1,026	7,180	16,003
Lubricants	.....	.....	782	112	782	948
Coastwise-domestic—						
Fuel oil	208,910	29,844	161,285	23,041	468,336	579,528
Diesel and gas oil	37,622	5,375	20,069	2,867	87,907	102,396
Gasoline	140,674	20,096	201,550	28,793	486,042	649,162
Kerosene	16,516	2,359	26,741	3,820	63,199	78,093

Ten Section

Shell Oil Co. in the Ten Section field of Kern County, completed No. 74-25-B Kern County Land in Section 25-30-26, flowing 2,810 bbl. of clean 33.3-gravity oil and 1,915,000 cu. ft. of gas per day from the Stevens zone with bottom of the hole at 8,200 ft. This new well which is located in the southwestern end of the field was finished with a 7-in. water string cemented at 8,025 ft. and a 5½-in. liner hung at 8,004 ft. and perforated at 8,040-8,192. Shell Oil Co., Inc., which controls all of the productive acreage in the Ten Section field which it discovered has one other well under way in the field and locations staked for two more.

Rio Bravo

Union Oil Co. completed a new well in the Rio Bravo field this week but it was not permitted to establish an open-flow potential and thus its actual flow does not represent its real capacity. It is No. 52-34 Kern County Land in Section 34-28-25. It showed an initial of 550 bbl. of 39.4-gravity oil and 750,000 cu. ft. of gas per day through an 8/64-in. bean from the Rio Bravo zone, with bottom of the hole at 11,511 ft. This well is easily capable of producing 5,000 bbl. per day as behind the 8/64-in. bean the well shows a tubing pressure of 1,825 lb. and a casing pressure of 1,950 lb. Union Oil Co., following the example of Superior Oil Co., has moved northwestward and started a well in Section 27-28-25, which will be designated as No. 56-27 Kern County Land. Superior Oil Co. has started a new well on the Rudnick lease in Section 28-28-25 and thus has the most northwesterly drilling project in the field at present. In Section 27-28-25 Superior Oil Co. has passed the 6,500-ft. level in No. 1 Roe, a recent spud.

Greeley

Standard Oil Co. filed an abandonment notice this week on No. 12-6 Kern County Land, in Section 30-29-26, much to the surprise of many as this well, which came in July 16, 1939, flowing 3,800 bbl. of 37.1-gravity oil cutting 7 per cent from 11,942 ft., gradually went to water. Top of the Rio Bravo siltstone was cored and found tight at 11,850 ft., top of the Vedder oil sand was cored at 11,915 ft., and the bottom of the hole was still in oil sand when drilling operations were concluded. This well is located about 4,000 ft. southwest of production in the Greeley field, and following its completion many were of the opinion that Standard Oil Co. had extended the productive limits of the Greeley field. Others believe that Standard has possibly found a new productive area southwest of the Greeley field. It is not likely that any further drilling will be done for the present as the company is busy in the northern end of the Greeley field protecting its offset drilling against General Petroleum Corp., which successfully completed an excellent flowing well out on the northwest flank of the structure. In the northern end of the Greeley field, General Petroleum is running one string of tools and has one derrick up and location staked for another, while Standard Oil Co. is running three strings of tools and has derrick up for another well. Superior Oil Co. entered this picture subsequent to completion of General Petroleum's large completion on the Sullivan property in Section 12-29-25 by starting work on the Scofield lease in the same section. At present the productive limits of the deep zone in the Greeley field remain undetermined in a northerly direction.

Kern County

Belridge Oil Co. changed a small producer into a well doing 890 bbl. of 31.9-gravity oil and 2,095,000 cu. ft. of gas daily by redrilling the hole to 8,495 ft. and then cementing a 7-in. water string at 8,207 ft. This new, No. 4-27 in Section 27-27-20 was originally bottomed at 8,515 ft. but in the redrilling job the lower part of the hole was abandoned.

In the Midway-Sunset field, Texas Co. completed No. 37 in Section 32-32-24 pumping 285 bbl. of clean 23.3-gravity oil per day from 3,209 ft. after finishing the hole with a 6⅝-in. water string cemented at 3,125 ft. and 143 ft. of 4¾-in. liner landed at 3,209 ft. and carrying perforations at 3,138-3,209 ft.

Coastal District

Texas Co. completed an excellent well in the Shiells Canyon section of Ventura County this week when No. 138 Shiells, in Section 4-3-19, was brought in flowing 240 bbl. of 29.6-gravity oil and 370,000 cu. ft. of gas per day through a 1½-in. bean from 2,993 ft. Top of the productive oil sand was cored at 2,902 ft., which gives the well 91 ft. of productive sand.

In the Ventura Avenue field Tide Water Associated Oil Co. recompleted No. 20 Hartman flowing 490 bbl. of 26.6-gravity oil cutting 10 per cent along with 242,000 cu. ft. of gas per day after the hole had been redrilled and deepened from 5,407 ft. to 7,448 ft. This rejuvenated well was finished with a 7-in. water string cemented at 7,280 ft. and 200 ft. of 4¾-in. liner landed at 7,443 ft. and carrying perforations at 7,285-7,443 ft. and 6,783 ft. of 2½-in. tubing.

Los Angeles Basin

Basin Oil Co. succeeded in completing No. 7 Potrero in the Potrero field of Los Angeles County flowing 420 bbl. of clean 32.2-gravity oil and 350,000 cu. ft. of gas daily from 3,005 ft. This well, which was drilled to 3,585 ft. but which found a faulted condition in the lower part of the hole was redrilled to its present depth, 3,005 ft. The hole was finished with 3,000 ft. of 7-in. casing and after the bottom had been cemented the crew gun-perforated a thin sand a short distance above the bottom.

Union Oil Co. completed No. 20 Hole in the East Coyote field of Orange County, but this new well was good for only 70 bbl. of 23.5-gravity oil cutting 40 per cent from 5,388 ft. This well is in Section 22-3-10 and was finished with a 7-in. water string cemented at 3,960 ft. and 1,493 ft. of 5½-in. liner landed at 5,385 ft. and cemented through perforations at 4,976 ft. Perforations opposite the oil sand were at 4,981-5,385 ft.

North Louisiana, Arkansas

By GEORGE WEBER

Important Dorcheat Outpost a Failure in Smackover Lime

SHREVEPORT, La., Jan. 29.—Freezing weather slowed down operations generally in the tristate area during the past week, with routine activity in most sectors. Failure of a Smackover-lime wildcat located west of the Dorcheat field in Columbia County, Arkansas, and progress on several important deep wildcats elsewhere in Arkansas and North Louisiana claimed attention.

Gulf Refining Co.'s No. 1 Lewis, C SW NE Section 12-18-23, approximately 1½ miles north and 4 miles west of production in the Dorcheat field, Columbia County, Arkansas, was abandoned late in the past week after failing to find production in the Smackover lime. The test topped the Buckner at 8,968 ft., Smackover at 9,005 ft., and the porous Reynolds-lime member of that formation at 9,013 ft. Hard, dense oolitic lime, with a slight odor of distillate and sulfur, was cored at 9,025-40 ft., and hard, dense, slightly oolitic lime with an odor of gas and showing a slight cut under ether was cored at 9,040-45 ft. On a recovery of 18 ft. 6 in. of core from 9,045-65 ft., operators had porous oolitic lime which showed evidence of salt and sulfur water. A drill-stem test was made at 9,025-45 ft., and in 7 minutes, using ¼-in. chokes top and bottom, 6 ft. of mud was recovered, with no show of oil or salt water, and no pressure. A second drill-stem test at 9,045-69 ft. using ⅜-in. chokes top and bottom, recovered 1,600 ft. of salt water in 7 minutes. It is believed that, although some distillate and possibly oil saturation was present, the low permeability of the porous lime prevented flow. This condition has been found in similar wildcats to the north and west of the Gulf's test.

Dorcheat Completion

A new well in the Dorcheat field further pointed to evidence that the field may be a gas-condensate reservoir. Shell Oil Co.'s No. 1 Keith, north offset to the discovery well, came in making 104 bbl. of 50.2-gravity production daily, with tubing pressure of 2,600 lb. and casing pressure of 2,700 lb. The gas-oil ratio was high, as is the case in other wells in that field.

The Magnolia field in Columbia County gained three new wells during the week. Drilling operations are now mainly scattered along the edges of the well-defined anticlinal structure. An extension of production on the extreme west end of the east-west elongated field was completed in the Normandie Oil Corp.'s No. 1 H. E. King, C NE NE Section 20-17-20. The well made an initial production of 480 bbl. through a 10/64-in. choke with tubing pressure at 900 lb. and casing pressure at 1,400 lb. The porous lime was topped at 7,621 ft. and the well is bottomed at 7,630 ft., considerably above the oil-water contact in the porous zone. Two other completions in the field brought the total number of Magnolia producers to 87.

In Union County Barnsdall Oil Co.'s No. 1 Cameron, a wildcat, 5 miles west of Junction City, continued in the Cotton Valley formation below 8,440 ft. The test topped that formation at 6,197 ft. Although no wildcats have been drilled to the Smackover lime sufficiently close to the current wildcat to check it accurately, it may be running low, as the Smackover lime was expected before the hole reached its present depth.

Elm Grove Test

Gulf Refining Co.'s No. 20 Hodges, a deep test in the Elm Grove, Bossier Parish, Louisiana, became the center of interest as it topped the Cotton Valley formation and continued coring below 8,235 ft. at latest reports. The Gulf test topped the Travis Peak formation at —5,428 ft., or 149 ft. higher than the Prairie River Syndicate's No. 2-B Hutchison, drilled on the southwest flank of the field, about 4 miles to the southwest.

Gulf tested 4,000,000 cu. ft. of gas, a spray of salt water and a show of heavy oil in the porous lime of the lower Glen Rose formation at 4,400-25 ft. last September, but drilled ahead. The possibility of lower Marine or Cotton Valley-formation production in this field is now making this test the center of interest in North Louisiana.

Other wildcats in North Louisiana continued active. In Bienville Parish Harry Hanbury's No. 1 Holston, considered a good prospect, is drilling below 4,380 ft. The Hunt Oil Co. and Arkansas Fuel Oil Co.'s No. 1 Goodpine, a La Salle Parish wildcat, is below 5,365 ft., and in the Sugar Creek field of Claiborne Parish Sugar Creek Syndicate's No. 1 Robinson is below 5,400 ft.

Production by Pool

Estimated daily gross production all companies week ended January 27, 1940:

NORTH LOUISIANA

	Bbl.
Bellevue	475
Caddo light	5,230
Caddo heavy	2,270
Converse	500
Cotton Valley	*14,050
Cross Lake	5,015
De Soto and Red River	1,080
Elm Grove	315
Haynesville	2,730
Holly	75
Homer	2,720
Lisbon	5,640
Pleasant Hill	95
Rodessa	22,100
Sarepta-Carterville	†330
Sligo	1,855
Sugar Creek	425
Urania	2,620
Zwolle	2,175
Total	69,700

SOUTH ARKANSAS

Atlanta	810
Big Creek	Shut in
Buckner	2,545
Champagnolle	1,325
Dorcheat	1,130
El Dorado	1,730
Lewisville	450
Lisbon	220
Magnolia	20,085
Miller County	255
Nevada	560
Rodessa	2,575
Schuler	18,200
Smackover light	1,875
Smackover heavy	14,245
Stephens	515
Troy	1,230
Urbana	930
Village	1,220
Total	69,900

*3,850 bbl. is distillate. †105 bbl. is distillate. Texas side of Rodessa, 25,525 bbl.

NORTH LOUISIANA COMPLETIONS

Caddo—Caddo Parish

Arkansas Fuel Oil Co.'s No. 4 Hunter, Section 1-20-16, pumping 50 bbl., total depth 1,597 ft. C. C. Lowery's No. 1 Huckaby, Section 7-20-15, pumping 20 bbl., total depth 1,486 ft. McDonald & Campbell's No. 6-A Natalie, Section 10-20-15, pumping 25 bbl., total depth 2,205 ft. Stanolind Oil & Gas Co.'s No. 1 Alexander, Section 21-21-15, dry and abandoned, total depth 1,828 ft.

Rodessa—Caddo Parish

Travis and Red Iron Drilling Co.'s No. 2 Chandler and others, 2,410 ft. east, 1,929 ft. south NW cor. Section 5-23-15, 240 bbl., ¼-in. choke, tubing pressure 315 lb., no gage on casing, 7-in. casing 6,024 ft., total depth 6,107 ft.

Monroe—Union Parish

Memphis Natural Gas Co.'s No. 2 Edwards, Section 11-21-3, 3,000,000 cu. ft. gas, rock pressure 945 lb., total depth 2,188 ft.

ARKANSAS COMPLETIONS

Magnolia—Columbia County

Arkansas Fuel Oil Co.'s No. 2-B King, C SE NW Section 21-17-20, 272 bbl., 10 per cent salt water, 24/64-in. choke, tubing pressure 250 lb., casing pressure 1,500 lb., total depth 7,682 ft. Normandie Oil Corp.'s No. 1 H. E. King, C NE NE Section 20-17-20, 480 bbl., 10/64-in. choke, tubing pressure 900 lb., casing pressure 1,400 lb., total depth 7,630 ft. Placid Oil Co.'s No. 1 Boothe unit, C NE SE Section 19-17-19, 240 bbl., 10/64-in. choke, tubing pressure 1,400 lb., casing pressure 900 lb., top porous lime 7,556 ft., total depth 7,592 ft.

Dorcheat—Columbia County

Shell Oil Co., Inc.'s No. 1 W. P. Keith, C SE SE Section 9-18-22, 104 bbl., ⅛-in. choke, tubing pressure 2,600 lb., casing pressure 2,700 lb., top porous lime 8,826 ft., total depth 8,879 ft.

Wildcat—Columbia County

Gulf Refining Co.'s No. 1 Lewis, 2,030 ft. south, 1,980 ft. west NE cor. Section 12-18-23, top Smackover lime 9,005 ft., top porous section 9,013 ft., tested 1,600 ft. salt water at 9,045-69 ft. and abandoned.

EAST TEXAS BORDER COMPLETIONS

Rodessa—Marion County

Arkansas Fuel Oil Co.'s No. 1 Grace H. Barnes, 948 ft. south, 1,055 ft. east NW cor. 283-acre tract, Richardson Survey, 30,000,000 cu. ft. gas, open flow, perforated 5,964-6,053 ft., and acidized with 5,000 gal., total depth 6,087 ft.

East Texas Fields

(Continued from Page 53)

ties continue to draw attention. Proposed location is reported to be within the W. Watts Survey, B. Struck Survey, and S. W. Turner Survey. Considerable lease trading has been carried on in these three surveys during the past 3 or 4 months and definite announcement of the test is expected soon.

Deep Activity

Failure to find its original objective was seen at the Shell Oil Co., Inc.'s No. 1 Campbell, deep test on the Chapel Hill structure of Smith County. Its original contract depth of 8,600 ft. was reached as the week closed and operators have shut down pending a decision to deepen or plug back for testing in several zones higher in the hole. It is expected to be plugged to a section in the Paluxy sand from 5,785 to 5,821 ft. which showed an estimated 17,000,000 cu. ft. of gas several weeks ago. Best porosity found in the Glen Rose section was from 8,038 to 8,072 ft. The test is bottomed in the Travis Peak formation of lower Trinity, the formation having been topped at 8,247 ft.

About 2 miles south of the Chapel Hill discovery well and 3½ miles south of Shell's test, Sun Oil Co. is drilling below 6,062 ft. at its outpost on the south flank of the structure. The hole is still in Glen Rose, which was topped at 5,781 ft. The Sun test has been correlated about 30 ft. higher on the top of the Glen Rose than Shell's wildcat to the north.

In Camp County, and expected to be drilled considerably below its original 7,500-ft. contract depth, H. S. Moss' No. 1 Joe Venters, S. Wright Survey, was last reported drilling below 7,456 ft. The operator has indicated that the hole will be carried several hundred feet deeper than 7,500 ft. if necessary.

Northern Houston County's deep wildcat, Shell Oil Co.' Inc.'s No. 1 Dorsey, M. Sallas Survey, was repairing rig and preparing to drill deeper after having cleaned up a 2 weeks' fishing job at 9,884 ft. Eliminating the necessity of sidetracking the hole, the lost core bar-

rel was recovered and operators intend to start drilling again toward the 11,000-ft. level.

EAST TEXAS COMPLETIONS
(1-hour gages)

Gregg County—Longview Area

Atlantic Refining Co.'s No. 15 Bander, 3,616-3,706 ft., 62 bbl. Gulberson Oil Co.'s No. 11 Stuckey-Thrasher. 3,577-83 ft., 60 bbl. Johnson-Mercer's No. 3 G. H. Reed, 3,669-71 ft., 10 bbl., pumping.

Gregg County—Kilgore Area

T. P. Looney's No. 2 M. Strong, 3,623-30 ft., 42 bbl. Sinclair Prairie Oil Co.'s No. 59-B A. A. King, 3,452-60 ft., 60 bbl.

Rusk County—Joiner Area

Hunt Oil Co.'s No. 5-E Bradford, 3,552-3,652 ft., 16 bbl.

NORTH TEXAS COMPLETIONS

Archer County

Cities Service Oil Co.'s No. 25 L. F. Wilson, 4,361-4,400 ft., 606 bbl. Continental Oil Co.'s No. 6 L. F. Wilson, 4,235-4,347 ft., 1,536 bbl. Continental Oil Co.'s No. 7 L. F. Wilson, 4,325-52 ft., 1,776 bbl. King Oil Co.'s No. 10 M. E. Rogers A, 1,350 ft., dry. Bert L. Ligon and others' No. 5 T. J. Moss A, abandoned location. Bert L. Ligon and others' No. 6 T. J. Moss A, abandoned location. Phillips Petroleum Co.'s No. 1 Dr. J. A. Little, 4,303-63 ft., 1,623 bbl.

Baylor County

British American Oil Producing Co.'s No. 1 C. E. Holman, 5,003 ft., dry.

Cooke County

Bridwell Oil Co.'s No. 2 J. Flusche B, 790-810 ft., 17 bbl. Cox & Hamon's No. 11 K. Neuw B, 4,927-29 ft., perforated casing 4,785-4,898 ft., 671 bbl. Dickson Oil Co.'s No. 1 S. A. Lynn, 1,100-12 ft., 165 bbl. Dickson Oil Co.'s No. 2 S. A. Lynn, 1,101-9 ft., 150 bbl. Dickson Oil Co.'s No. 3 S. A. Lynn, 1,090-1,100 ft., 170 bbl. Whitfield, Pearson & Grimes No. 10 Voth, 1,675-85 ft., 103 bbl.

Jack County

Champlin, Bass & Wilson's No. 2 G. E. Winn and others, 3,248-63 ft., 380 bbl. Hanlon-Buchanan's No. 5 T. T. Bouldin, abandoned location. Holbrook & Wood's No. 1 J. W. Maxey, 535 ft., dry.

Wichita County

Bell Oil & Gas Co.'s No. 10 M. & J. B. Evans B, 1,260-78 ft., 10 bbl. Consolidated Oil Co.'s No.4 E. M. Barnes A, 3,954-91 ft., 314 bbl. Fain-McGaha Oil Corp.'s No. 2 J. B. Tidwell, 3,778-3,830 ft., 1,048 bbl. Granite Oil Trust's No. 3 N. H. Martin, abandoned location. Hammon and Hanlon-Buchanan, Inc.'s No. 6 W. H. Hammon, 3,978-4,067 ft., 912 bbl. Palmer & Chenault No. 4 J. L. and T. J. Waggoner, 3,667-79 ft., 600 bbl. George Proctor and others' No. 46 Ed Foster A, 872-90 ft., 20 bbl. Sunray Oil Co.'s No. 3 L. C. Denny, 3,793-3,855 ft., 720 bbl. Tide Water and others' No. 16 W. P. Ferguson, 3,745-3,849 ft., 960 bbl. Underwood Oil Co.'s No. 8 M. P. Rogers, 1,194-1,208 ft., 300 bbl.

Wilbarger County

Consolidated Oil Co.'s No. 4 W. T. Waggoner CC, abandoned location.

Young County

Long & Ray's No. 2 G. A. Bills, 2,715-78 ft., 423 bbl. A. P. Nicholson's No. 1 W. W. Gregg, 580 ft., dry. Trentman, Nunnellee & Rankin No. 2 H. Brashear A, 2,725-81 ft., 50 bbl. P. B. Worthington's No. 1 E. J. Larimore, 886 ft., dry.

EAST CENTRAL TEXAS COMPLETIONS

Houston County

In the Navarro Crossing field Humble Oil & Refining Co.'s No. 4 J. Burns heirs, G. Thompson Survey, 5,855½-57 ft., 100 bbl. per day.

Michigan Field Report

By **O. C. PRESSPRICH**

Wells On the East Side of Redding Yield Large Output

SAGINAW, Mich., Jan. 29.—Completion of a pair of edge-test gusher wells of exceptional initial production in the Redding field of Clare County was outstanding in an otherwise featureless week in the Michigan oil industry. Heavy snows and coldest weather of the winter kept operations at a minimum, hampered progress on drilling wells and contributed to the fact that the week brought only 18 completions, six of which were dry holes.

On the far eastern edge of the field, No. C-1 J. S. Bicknell, SW NW SE Section 27-19n-6w, Redding Township, a Pure Oil Co. development, had an initial flow of 130 bbl. an hour. The hole is bottomed at 3,874 ft. in the Monroe limestone. The other Redding feature was American Drilling Co.'s No. K-1 State, C N½ SW NE Section 32, rating 2,640 bbl. a day, naturally, at 3,879 ft. It is on the western side of the field. Two other Pure Oil tests and a Turner Petroleum Co. well are due for completion shortly.

Activity in the southwestern part of the state concentreated in Tallmadge Township of Ottawa County, where the Kent-pool extension was the scene of five new oil wells, although none of this was particularly good. The best was Welsh Oil Co. and Smith Petroleum Co.'s No. 3 Adema-Mae in Section 25-7n-13w, completed at 1,859 ft. and rating 525 bbl. a day, after it was acidized. American Drilling Co. completed a 250-bbl. well in Section 24 and the three others were good for 100 bbl. each. In Kent County development was at the lowest point in months, as only two small wells were completed, one for 80 bbl., the other only 8.

Allegan and Van Buren counties likewise were in the doldrums as Red-Man Oil Co. recorded a dry hole in Allegan's Dorr Township, while Daily Crude Oil abandoned a dry hole in Salem. Two wildcat tests in Van Buren's Decatur Township also failed, one in Section 6, the other in Section 9. Both were limestone tests.

For Central Michigan the center of action is Isabella County. Pure Oil Co. rated its No. 16 Wille in Broomfield, Section 4, at 125 bbl. a day, while J. V. Wicklund Development Co.'s No. 1 Leosh, farthest north producer in the field, rated 147 bbl. a day after getting a second acidizing.

N. A. Trexler's No. 1 Bagley in Barry County got a 5-bbl. production from 1,941 ft., the test being in Hope Township, 2n-9w. Fisher-McCall Oil & Gas, Inc., wildcatting in Kalamazoo's Alamo Township, 16n-3w, abandoned No. 1 Ballett, while in Bowne Township of Kent County the Smith Petroleum's No. 1 Wingeier was a dry hole.

Testing in Isabella County was given added impetus as five drilling permits were issued during the week by the state Conservation Department. Five other permits were for Ottawa activity, five for Kent, four for Allegan, one for Clare, one for Calhoun and another for Genesee County.

In an effort to conserve resources of the Overisel field in Allegan County, P. J. Hoffmaster, state supervisor of wells, has ordered proration at the rate of 100 bbl. per well per day, beginning February 1, in eight sections. The order affects 19 producing wells. Hoffmaster said "the immediate situation is not dangerous" but added evidence of water seepage and decreased pressure justifies the restrictions. He estimated the order will increase the life of the field and increase its ultimate production 50 per cent. He said that on the average the field, extended southward from the original Overisel field since April 1939, has been producing 200 bbl. per well per day.

Allegan County

Dorr Township (4n-12w): Red-Man Oil Co.'s No. 1 Ray Hibma, NW SW NE Section 4, was dry and abandoned at 1,701 ft.

Salem Township (4n-13w): Daily Crude Oil Co.'s No. 1 H. Weber and others, SE NE SW Section 11, was a dry hole, abandoned at 1,616 ft.

Barry County

Hope Township (2n-9w) : N. A. Trexler's No. 1 Bagley, NE NW SW Section 27, completed at 1,941 ft., rated a small producer, after an acid treatment output being only 5 bbl. a day.

Kalamazoo County

Alamo Township (1s-12w): Fisher-McCall Oil & Gas, Inc.'s No. 1 O. K. Ballett, SW NW NE Section 32, was completed as a dry hole at 1,339 ft.

Clare County

Redding Township (19n-6w): Pure Oil Co.'s No. C-1 J. S. Bicknell, SW NW SE Section 27, had initial potential of 3,120 bbl. a day, naturally. The test was completed at 3,874 ft. American Drilling Co.'s No. K-1 State, C N½ SW NE Section 32, was good for 2,640 bbl. a day, naturally, at 3,879 ft.

Isabella County

Broomfield Township (14n-6w): Pure Oil Co.'s No. 16 Stanley E. Wille, C N½ SE NE Section 4, rated 125 bbl. a day, after an acid treatment, completed at 3,634 ft.

Wise Township (16n-3w): J. V. Wicklund Development Co.'s No. 1 Ivan Leosh, SE SE SW Section 8, produced 147 bbl. a day from 3,740 ft., after it was acid-treated.

Kent County

Bowne Township (5n-9w): Smith Petroleum Co. abandoned No. 1 Simon Wingeier, S½ S½ SE SW Section 11, dry at 714 ft.

Walker Township (7n-12w): American Drilling Co.'s No. 2 Gaudzwaard-Keeler, NW SW NW Section 29, acidized at 1,898 ft., produced 80 bbl. a day.

Wyoming Township (6n-12w): Swanson Consolidated Oil Co.'s No. A-1 Decker & Jean, SE NE SE Section 14, produced 8 bbl., naturally, from 1,926 ft.

Ottawa County

Tallmadge Township (7n-13w): Twin Drilling Co.'s No. B-3 F. D. McKay, NW SW SW Section 24, was good for 100 bbl. a day from a depth of 1,898 ft., after being acid-treated. Similar production came from Twin Drilling Co.'s No. B-5 McKay, SW SW SW Section 24, completed at 1,903 ft. American Drilling Co.'s No. 2 John Zokoe, SW SE SW Section 24, was good for 250 bbl. a day, naturally, from 1,869 ft. Welsh Oil Co. and Smith Petroleum Co.'s No. 3 Adema-May and others, SW NE NW Section 25, completed at 1,859 ft., rated 525 bbl. a day after acid treatment, while Twin Drilling Co.'s No. C-1 F. D. McKay, NE NE NE Section 26, was placed on production at 100 bbl. a day, after acid treatment, total depth being 1,889 ft.

Van Buren County

Decatur Township (4s-14w): R. D. Malcolm, trustee's No. 1 Gould, NW NW SE Section 6, was abandoned as a dry hole at 1,119 ft. Fisher & McCall and others' No. 1 E. W. Solomon, SE SE NE Section 9, likewise failed, at 1,107 ft.

WILDCAT OPERATIONS

CALIFORNIA

IMPORTANT WELLS AND NORTHERN CALIFORNIA WILDCATS

Company, well, location, and county—	S.T.R.	Depth	Status
Union Oil, No. 1 Russell, Santa Maria, Santa Barbara	20-10-34	3,793	sd. sh. drlg.
Union Oil, No. 2-4 O'Donnell, Santa Maria, S. Barbara	29-10-34	4,995	sd. sh. drlg.
Union Oil, No. 2-5 O'Donnell, Santa Maria, S. Barbara	29-10-34	5,640	flow. 2,500 b.d.
Cole, F. E., No. 3 Paderewski, Santa Maria, S. Barbara	29-10-34	5,570	sd. sh. drlg.
Hamilton, W. C., No. 1 Hollister, Goleta, S. Barbara	3- 4-29	862	sd. sh. drlg.
Oil Group, Inc., No. 1 Hyland, Summerland, S. Barb.	16- 4-26	1,315	will deepen
Coronet Oil, No. 4 Crown, Ojai, Ventura	17- 4-21	1,165	P.B. 1,150
Savage Oil, No. 8 Calumet, Shiells Canyon, Ventura	3- 3-19	3,750	sd. sh. drlg.
Texas Co., No. 138 Shiells, Shiells Canyon, Ventura	4- 3-19	2,993	flow. 240 b.d.
Levesque, G. M., No. 1 Robertson, Simi, Ventura	17- 2-18	2,005	will deepen
G. E. Dev., No. 7 General, Hopper Canyon, Ventura	13- 4-19	231	cleaning out
Continental Oil, No. 13 Grubb, San Miguelito, Ventura	24- 3-24	6,320	P.B. 5,440
C. C. M. Oil, No. 10-B Hobson, Rincon, Ventura	8- 3-24	4,521	completing
C. C. M. Oil, No. 26-B Hobson, Rincon, Ventura	16- 3-24	4,921	P.B. 4,845
C. C. M. Oil, No. 8-A Hobson, Rincon, Ventura	15- 3-24	6,450	gr. sd. drlg.
Tide Water A. O., No. 43 V.L.W., Ventura Ave., Vent.	23- 3-23	7,292	sd. sh. drlg.
Tide Water A. O., No. 45 V.L.W., Ventura Ave., Vent.	24- 3-23	5,481	sd. sh. drlg.
Tide Water A. O., No. 16 McGonigle, Vent. Ave., Vent.	23- 3-23	10,100	sd. sh. drlg.
Tide Water A. O., No. 120 Lloyd, Ventura Ave., Vent.	27- 3-23	8,850	sd. sh. drlg.
Tide Water A. O., No. 122 Lloyd, Ventura Ave., Vent.	23- 3-23	7,293	sd. sh. drlg.
Tide Water A. O., No. 20 Hartman, Vent. Ave., Vent.	22- 3-23	7,448	flow. 490 b.d.
Tide Water A. O., No. 21 Hartman, Vent. Ave., Vent.	22- 3-23	8,672	sd. sh. drlg.
Shell Oil, No. 111 Taylor, Ventura Ave., Ventura	29- 3-23	6,850	sd. sh. drlg.
Shell Oil, No. 112 Taylor, Ventura Ave., Ventura	29- 3-23	4,491	sd. sh. drlg.
Shell Oil, No. 35 Edison, Ventura Ave., Ventura	21- 3-23	8,145	recmtd. 7,970
Cal. Alliance Pet., No. 2 Hartman, Ventura Ave., Vent.	22- 3-23	6,380	sd. sh. drlg.
Lloyd Corp., No. 4 Dabney, Ventura Ave., Ventura	23- 3-23	10,144	redrlg. 9,990
Beirldge Oil, No. 1-26, North Beirldge, Kern	1-28-20	8,292	test W.S.O.
Beirldge Oil, No. 4-27, North Beirldge, Kern	27-27-20	8,495	flow. 890 b.d.
Beirldge Oil, No. 1-22, North Beirldge, Kern	1-28-20	8,060	sd. sh. drlg.
Tide Water A. O., No. 8-A, Elliott, Los Hills, Kern	11-26-20	1,475	completing
Texas Co., No. 2 Beer, Devils Den, Lost Hills, Kern	8-26-19	1,180	sd. sh. drlg.
Davis Pet., No. 1 Kernco, Kern Front, Kern	13-28-27	1,346	bail. water
Dick & Dore Oil, No. 7 Kern, Kern River, Kern	34-28-28	527	O.S. drlg.
Dick & Dore Oil, No. 16 Kern, Kern River, Kern	34-28-28	475	O.S. drlg.
Helm & Smith, No. 18 Kern, Kern River, Kern	34-28-28	230	sd. sh. drlg.
El Tejon O. & R., No. 2 Douglas, Edison, Kern	32-32-29	866	sd. sh. drlg.
Goodrum & Vincent, No. 3 S.P., Edison, Kern	31-29-30	414	sd. sh. drlg.
O'Reily, Frances, No. 2 Seale, Edison, Kern	5-30-29	4,070	fish D.P.
Whiston, H. L., No. 1 Wasem, Edison, Kern	32-29-29	2,260	sd. sh. drlg.
Universal Cons'd Oil, No. 2 Cattani, Arvin, Kern	15-31-29	5,960	sd. sh. drlg.
Union Oil, No. 4-23 Bowerbank, Goose Lake, Kern	25-29-24	12,144	P.B. 11,770
Standard Oil, No. 3 Mushrush, Wasco, Kern	7-27-24	13,130	flow. 3,300 b.d.
Continental Oil, No. 5-8-A, KCL, Wasco, Kern	8-27-24	10,880	sd. sh. drlg.
Continental Oil, No. 1 Meyer, Wasco, Kern	7-27-24	8,875	sd. sh. drlg.
Continental Oil, No. 1 Community, Shafter, Kern	12-28-24	3,696	sd. sh. drlg.
Union Oil, No. 21-34, KCL, Rio Bravo, Kern	34-28-25	11,190	fish. casing
Union Oil, No. 52-34, KCL, Rio Bravo, Kern	34-28-25	11,511	completing
Superior Oil, No. 1 Rudnick, Rio Bravo, Kern	28-28-25	2,995	sd. sh. drlg.
Superior Oil Co., No. 1 Roe, Rio Bravo, Kern	27-28-25	6,094	sd. sh. drlg.
Standard Oil, No. 11-23, KCL, Greeley, Kern	18-29-26	7,475	sd. sh. drlg.
Standard Oil, No. 12-7, KCL, Greeley, Kern	7-29-26	8,950	sd. sh. drlg.
Standard Oil, No. 12-8, KCL, Greeley, Kern	7-29-26	5,996	sd. sh. drlg.
General Pet., No. 1 Farrand, Greeley, Kern	12-29-25	10,260	sd. sh. drlg.
Superior Oil, No. 1 Scofield, Greeley, Kern	12-29-25	9,295	sd. sh. drlg.
Shell Oil, No. 83-29-A, KCL, Ten Section, Kern	29-30-26	2,983	sd. sh. drlg.
Shell Oil, No. 4-28-A, KCL, Ten Section, Kern	28-30-26	8,222	flow. 3,504 b.d.
Shell Oil, No. 74-25-A, KCL, Ten Section, Kern	25-30-25	8,200	O.S. drlg.
Tide Water-Continental, No. 3-7-E, KCL, Strand, Kern	7-30-26	8,330	flow. 1,954 b.d.
Shell-Ohio, No. 64-12-A, KCL, Strand, Kern	12-30-25	8,734	cleaning out
Ohio Oil, No. 17-E, KCL, Canal, Kern	13-30-25	7,990	sd. sh. drlg.
Shell Oil, No. 21-13-A, KCL, Canal, Kern	13-30-25	8,980	P.B. 8,640
Richfield Oil, No. 72-33-B, KCL, Tupman, Kern	33-30-25	8,570	sd. sh. drlg.
Richfield Oil, No. 58-29-A, KCL, Tupman, Kern	29-30-25	9,042	P.B. 9,020
Richfield Oil, No. 76-29-A, KCL, Tupman, Kern	29-30-25	7,883	sd. sh. drlg.
Richfield Oil, No. 12-3-C, KCL, Cole's Levee, Kern	3-31-25	2,864	sd. sh. drlg.
Shell Oil, No. 87-17-B, KCL, Cole's Levee, Kern	17-31-25	8,780	sd. sh. drlg.
Standard Oil, No. 20-2, KCL, Cole's Levee, Kern	9-31-25	9,460	sd. sh. drlg.
Standard Oil, No. 20-3, KCL, Cole's Levee, Kern	9-31-25	9,934	salt water
Ohio Oil, No. 6-F, KCL, Cole's Levee, Kern	11-31-25	9,714	O.S. drlg.
Ohio Oil, No. 7-F, KCL, Cole's Levee, Kern	3-31-25	8,940	sd. sh. drlg.
Tide Water A. O., No. 81, KCL, Cole's Levee, Kern	14-31-25	10,125	flow. 145 b.d.
Tide Water A. O., No. 65, KCL, Cole's Levee, Kern	13-31-25	10,330	hd. sh. drlg.
Tide Water A. O., No. 72, KCL, Cole's Levee, Kern	14-31-25	3,694	sd. sh. drlg.
Union Oil, No. 54-11, KCL, Cole's Levee, Kern	11-31-25	10,100	sd. sh. drlg.
Richfield Oil, No. 1 Slough, South Ten Section, Kern	6-31-26	9,696	sd. sh. drlg.
Merritt-Annex Oil, No. 1-34, M.A., Mid.-Sunset, Kern	34-32-24	2,200	cleaning out
General Pet., No. 1 B.V.A., Midway-Sunset, Kern	1-32-24	10,771	hd. sh. drlg.
Signal Oil & Gas, No. 7 Kendon, Midway-Sunset, Kern	35-32-23	1,096	sd. sh. drlg.
Shell Oil, No. 45-9 B.V.A., Midway-Sunset, Kern	9-32-25	9,890	redrlg. 9,755
National Oil, No. 35 Sunset, Midway-Sunset, Kern	35-32-23	1,198	O.S. drlg.
Texas Co., No. 37 Midway, Midway-Sunset, Kern	32-32-24	3,209	pump. 285 b.d.
Ohio Oil, No. 43-3-B, KCL, Paloma, Kern	3-32-26	9,090	sd. sh. drlg.
West. Gulf-Texas Co., No. 74-3-A, KCL, Paloma, Kern	3-32-26	10,440	O.S. drlg.
Richfield Oil, No. 81-36 B.V.A., Buena Vista L., Kern	36-31-25	11,379	P.B. 5,560
Shell Oil, No. 52-2-13-A, KCL, San Emidio, Kern	13-11-22	13,180	hd. sh. drlg.
Cal.-Stan Oil, No. 1 Weber, McKittrick, Kern	34-30-22	1,220	P.B. 1,054
Burrhus, V. E., No. 1 Haberkern, Elkhorn, Kern	21-32-22	1,835	sd. sh. drlg.
Jergins Trust, No. 1 Cheney, Panoche Creek, Fresno	29-14-13	5,698	gr. sh. drlg.
Texas Co., No. 1 S.P., Turk Anticline, Fresno	23-17-15	5,287	sd. sh. drlg.
Standard Oil, No. 51-19-B fee, NE. Coalinga, Fresno	19-19-16	8,102	recmtd. 8,030
Standard Oil, No. 62-19-B fee, NE. Coalinga, Fresno	19-19-16	7,596	sd. sh. drlg.
Union Oil, No. 88-18-Cook, NE. Coalinga, Fresno	18-19-16	7,190	sd. sh. drlg.
Amerada Pet., No. 22-20 Ewing, NE. Coalinga, Fresno	20-19-16	8,142	O.S. drlg.
Bandini Pet., No. 46-18-B, NE. Coalinga, Fresno	18-19-16	8,440	hd. sd. drlg.
Superior Oil, No. 3 Husong, NE. Coalinga, Fresno	18-19-16	2,874	sd. sh. drlg.
Bandini Pet., No. 51-30-B, Central Coalinga, Fresno	30-19-16	7,790	sd. sh. drlg.
Lytle, R. S., agent, No. 5-7-F, SE. Coalinga, Fresno	7-20-16	5,994	sd. sh. drlg.
Lytle, R. S., agent, No. 24-7-F, SE. Coalinga, Fresno	7-20-16	5,963	sd. sh. drlg.
Lytle, R. S., agent, No. 37-18-F, SE. Coalinga, Fresno	18-20-16	7,335	sd. sh. drlg.
Standard Oil, No. 66-13-C fee, SE. Coalinga, Fresno	13-20-15	7,522	O.S. drlg.
Standard Oil, No. 77-13-C fee, SE. Coalinga, Fresno	13-20-15	2,975	sd. sh. drlg.
Standard Oil, No. 42-19-F fee, SE. Coalinga, Fresno	19-20-16	7,000	sd. sh. drlg.
Superior Oil, No. 4 Cagle, SE. Coalinga, Fresno	6-20-16	6,465	sd. sh. drlg.
K. N. D. A., No. 27-18-J, Kettleman No. Dome, Fresno	18-21-17	9,070	hd. sd. drlg.
K. N. D. A., No. 334-18-J, Kettleman No. Dome, Fresno	18-21-17	8,197	hd. sd. drlg.
K. N. D. A., No. 25-16-Q, Kettleman No. Dome, Kings	16-22-18	7,140	sd. sh. drlg.
K. N. D. A., No. 6-26-Q, Kettleman No. Dome, Kings	26-22-18	4,484	sd. sh. drlg.
K. N. D. A., No. 36-26-Q, Kettleman No. Dome, Kings	26-22-18	8,496	completing
K. N. D. A., No. 38-26-Q, Kettleman No. Dome, Kings	26-22-18	6,006	sd. sh. drlg.
Standard Oil, No. 27-19-J, Kettleman N. Dome, Fresno	19-21-17	10,770	gr. sh. drlg.
Standard Oil, No. 72-19-J, Kettleman N. Dome, Fresno	19-21-17	10,903	fish D.P.
Standard Oil, No. 57-3-P, Kettleman N. Dome, Kings	3-22-17	5,960	sd. sh. drlg.
Standard Oil, No. 61-17-Q, Kettleman N. Dome, Kings	17-22-18	8,285	sd. sh. drlg.
Standard Oil, No. 72-17-Q, Kettleman N. Dome, Kings	17-22-18	7,277	sd. sh. drlg.
Standard Oil, No. 76-17-Q, Kettleman N. Dome, Kings	17-22-18	8,145	flow. 2,375 b.d.
Standard Oil, No. 83-17-Q, Kettleman N. Dome, Kings	17-22-18	8,315	flow. 1,880 b.d.
Standard Oil, No. 74-21-Q, Kettleman N. Dome, Kings	21-22-18	8,080	completing
Standard Oil, No. 32-27-Q, Kettleman N. Dome, Kings	27-22-18	7,800	flow. 1,268 b.d.
Standard Oil, No. 63-27-Q, Kettleman N. Dome, Kings	27-22-18	1,596	sd. sh. drlg.
Standard Oil, No. 72-27-Q, Kettleman N. Dome, Kings	27-22-18	3,561	sd. sh. drlg.
Standard Oil, No. 83-27-Q, Kettleman N. Dome, Kings	27-22-18	6,060	br. sh. drlg.
Standard Oil, No. 63-35-Q, Kettleman N. Dome, Kings	35-22-18	7,765	sd. sh. drlg.
Bristol Oil, No. 1 Ohio-Smith, Kettleman S. D., Kings	35-24-19	8,054	cleaning out
Shell Oil, No. 1 Cohn, Tulare Lake, Kings	4-22-19	7,894	sd. sh. drlg.
Priest Valley Pet., No. 1 Grove, Priest Valley, Mont.	22-20-12	1,996	hd. sd. drlg.
Buttes Oilfields, Inc., No. 6 Buttes, Marysville, Sutter	1-15-1	6,191	sd. sh. drlg.
Texas Co., No. 1 Holmes, Eureka, Humboldt	22- 3-1	3,930	sd. sh. drlg.
Richfield Oil, No. 2 Hill, Potrero, Solano	5- 4-1	1,355	sd. sh. drlg.

IMPORTANT WELLS AND SOUTHERN CALIFORNIA WILDCATS

Company, well, location, and county—	S.T.R.	Depth	Status
Union Oil, No. 74 Callender, Dominguez, Los Angeles	29- 3-13	7,117	flow. 280 b.d.
Union Oil, No. 13 Carson, Dominguez, Los Angeles	33- 3-13	7,870	sd. sh. drlg.

KEY TO ABBREVIATIONS USED IN DRILLING REPORTS

Abd., abandoned.
Acd., acidized.
B.O., barrels of oil.
B.P.D., barrels per day.
B.D., barrels daily.
B.P., back pressure.
B.R., building rig.
B. ck., bottom choke.
Br. sh., brown shale.
B.S., basic sediment.
C.&P., cellar and pits.
Cd. or Crd., cored.
C.D., correct depth.
Cg., coring.
Cmtd., cemented.
C.O., cleaning out.
Comp., completed.
Compr., compressor.
C.P., casing pressure, also cement through perforations.
Csg., casing.
D.D., drilling (or drilled) deeper.
Drlg., or Drg., drilling.
Drk. or Dk., derrick.
D.S., drill stem.
D.S.T., drill-stem test.
D.P., drill pipe.
D.&A., dry and abandoned.
Fsg., fishing.
Gbo., gumbo.
G.I., gas injection.
Gr., gravity.
Gr. sd., gray sand.
Grn. sh., green shale.
Hd. sd., hard sand.
H.F.W., hole full of water.
I.P., initial production.
L., lime.
Lnr., liner.
Loc., location.
M.I.M., moving in material.
M.I.R., moving in rig.
M.I.R.T., moving in rotary tools.
M.O.T., milling on tools.
O.I.H., oil in hole.
O.S., oil sand.
O.T.D., old total depth.
O.W.D.D., old well drilling deeper.
O.W.P.B., old well plugging back.
P.B., plugging back.
P.B.P., pulling or pulled big pipe.
P.L., pipe line.
P.L.O., pipe line oil.
Pmpg., pumping.
P.O.P., putting on pump.
P.P., pulled pipe.
Rd. sd., red sand.
Rd. sh., red shale.
Recmt., recemented.
Recvd., recovered.
Rmg., reaming.
Redrlg., redrilling.
Rng., running.
R.O.G., rig on ground.
R.P., rock pressure.
R.U., rigging up.
R.U.R., rigging up rotary.
R.U.S.T., rigging up standard tools.
R.&T., rods and tubing.
S. or Sd., sand.
S.D., shut down.
Sdy. sh., sandy shale.
Sdtrkd. or St., sidetracking.
S.D.P.L., shut down for pipe line.
S.D.O., or S.D.W.O., shut down awaiting orders.
S.G., show gas.
Sh.&L., shale and lime.
S.I., shut in.
S.I.P., shut in, prorated.
S.L.M., steel line measurement.
S.O., show oil.
S.O.G.&W., show of oil, gas, and water.
Spdg. or Spd., spudding.
S.R., straightreaming.
Stdg., standardizing (also standing).
S.W., salt water.
Swbg., swabbing.
T.A., temporarily abandoned.
Tbg., tubing.
T.D., total depth.
T. ck., top choke.
T.P., tubing pressure.
Tr., tract.
Tstd., tested.
U.R., underreaming.
W.I.H., water in hole.
W.O., workover.
W.O.C. or W.O.C.S., waiting on cement to set.
W.O.O., waiting on orders.
W.P., working pressure.
W.S.O., water shutoff.
W.S.S.O.K., water shutoff O.K.
W.S.R. or W.O.S.R., awaiting standard rig.
Wtr., water.

Shell Oil, No. 100 Reyes, Domingues, Los Angeles . . . 33- 3-13 7,820 P.B. 7,693
Morton & Elder, No. 2 Domingues, Dominguez, L. A. 32- 3-13 7,005 sd. sh. drlg.
Barnsdall Oil, No. 1 Santa Fe., Rosecrans, Los Angeles 20- 3-13 8,792 perforating
Averill, George, No. 3 South, Rosecrans, Los Angeles 20- 3-13 8,405 P.B. 8,215
Apex Pet., No. 1 Hatfield, Rosecrans, Los Angeles .. 20- 3-13 7,505 sd. sh. drlg.
Kelly & Sons, No. 1 McMillen, Rosecrans, Los Angeles 20- 3-13 7,693 flow. 100 b.d.
So. Calif. Pet., No. 1 Rowena, Rosecrans, Los Angeles 19- 3-13 7,360 sd. sh. drlg.
Union Oil, No. 36 Rosecrans, Rosecrans, Los Angeles 19- 3-13 7,700 cleaning out
Union Oil, No. 37 Rosecrans, Rosecrans, Los Angeles 19- 3-13 7,275 sd. sh. drlg.
Royalty Service, No. 1 Cement, Rosecrans, L. Angeles 19- 3-13 6,380 sd. sh. drlg.
Basin Oil, No. 7 Potrero, Potrero, Los Angeles ..... 34- 2-14 3,005 flow. 420 b.d.
Dominguez Estates, No. 1 South, Torrance, L. Angeles 2- 4-14 123 sd. sh. drlg.
Casa Grande Oil, No. 1 Lopez, San Fernando, L. Ang. 1- 2-15 2,320 swab. water
Tide Water A. O., No. 3 Porter, Aliso Canyon, L. A. 27- 3-16 5,133 O.S. drlg.
Tide Water A. O., No. 12 Porter, Aliso Canyon, L. A. 27- 3-16 7,696 hd. sh. drlg.
Tamas Oil, No. 1 Perkins, Newhall, Los Angeles .... 14- 3-16 3,900 O.S. drlg.
Consolidated Pet., No. 4 Needham, Newhall, L. A. .. 13- 3-16 4,300 sd. sh. drlg.
Barnsdall Oil, No. 1 R.S.F., Newhall, Los Angeles ... 27- 4-17 6,642 deepening
General Pet., No. 8 Blinn, Wilmington, Los Angeles .. 35- 4-13 2,191 sd. sh. drlg.
General Pet., No. 36 Harbor, Wilmington, Los Angeles 35- 4-13 2,945 flow. 330 b.d.
Bend Pet., No. 1 Star, Wilmington, Los Angeles ..... 35- 4-13 3,337 O.S. drlg.
Hamarson Oil, No. 1 Harbor, Wilmington, Los Ang. 35- 4-13 3,414 flow. 175 b.d.
Hancock Oil, No. 20-B Harbor, Wilmington, Los Ang. 35- 4-13 4,070 completing
Interstate Inv., No. 3 Harbor, Wilmington, Los Ang. 3- 5-13 3,219 flow. 200 b.d.
Long Beach Dev., No. 4-Z Harbor, Wilmington, L. A. 2- 5-13 2,660 sd. sh. drlg.
Long Beach Dev., No. 5-Z Harbor, Wilmington, L. A. 2- 5-13 3,190 O.S. drlg.
Union Pacific, No. 121, Wilmington, Los Angeles .. 3- 5-13 4,016 P.B. 3,823
Union Pacific, No. 125, Wilmington, Los Angeles ... 4- 5-13 3,588 flow. 210 b.d.
Union Pacific, No. 127, Wilmington, Los Angeles ... 3- 5-13 2,850 sd. sh. drlg.
Union Pacific, No. 128, Wilmington, Los Angeles ... 3- 5-13 1,985 sd. sh. drlg.
Union Pacific, No. 129, Wilmington, Los Angeles ... 4- 5-13 2,140 sd. sh. drlg.
Union Pacific, No. 130, Wilmington, Los Angeles ... 3- 5-13 2,652 sd. sh. drlg.
Union Pacific, No. 21-E, Wilmington, Los Angeles ... 3- 5-13 3,884 flow. 1,320 b.d.
Union Pacific, No. 7-C, Wilmington, Los Angeles ... 33- 4-13 3,300 sd. sh. drlg.
West Whittier Oil, No. 1 Pellissier, Whittier, Los Ang. 17- 2-11 3,460 sd. sh. drlg.
Kern Oil, No. 38 Monterey, Montebello, Los Angeles .. 2- 2-12 2,080 sd. sh. drlg.
Union Oil, No. 9 Howard & Smith, Montebello, L. A. 11- 2-12 6,191 sd. sh. drlg.
Bush Oil, No. 2 Zanetti, Montebello, Los Angeles .... 3- 2-12 7,671 O.S. drlg.
Caminol Co., No. 4-20 Cowan, Montebello, Los Angeles 3- 2-12 4,584 sd. sh. drlg.
C. A. P. Oil, No. 1 Dutch, Montebello, Los Angeles .. 11- 2-12 7,657 completing
Crestline Oil, No. 1 Pedro, Montebello, Los Angeles .. 11- 2-12 7,610 flow. 520 b.d.
Columbia Oil, No. 1 Schelnik, Montebello, Los Angeles 3- 2-12 4,992 sd. sh. drlg.
Franru Oil, No. 1 Condaffer, Montebello, Los Angeles 11- 2-12 3,140 sd. sh. drlg.
Herley-Kelly, Inc., No. 3 Burke, Montebello, Los Ang. 2- 2-12 4,432 fish. D.P.
Junior Oil, No. 1 Kay, Montebello, Los Angeles ..... 10- 2-12 7,515 O.S. drlg.
Larson Drlg., No. 3 Van Deusen, Montebello, Los Ang. 11- 2-12 7,894 will redrl.
Mabee Co., No. 6 Mulholland, Montebello, Los Angeles 2- 2-12 2,966 sd. sh. drlg.
Shoreline Drlg., No. 1 Mont., Montebello, Los Angees 11- 2-12 7,498 sd. sh. drlg.
Stagg Oil, No. 1 Brown, Montebello, Los Angeles .... 10- 2-12 7,007 sd. sh. drlg.
Star Pet., No. 1 Prescott, Montebello, Los Angeles .... 10- 2-12 7,625 flow. 315 b.d.
Star Pet., No. 1 Allen, Montebello, Los Angeles ..... 11- 2-12 6,975 sd. sh. drlg.
Texas Co., No. 2 Wilcox, Montebello, Los Angeles .... 3- 2-12 7,740 redrlg. 5,080
Texas Co., No. 3 Wilcox, Montebello, Los Angeles ... 3- 2-12 7,688 flow. 475 b.d.
Westmont Oil, No. 1 West, Montebello, Los Angeles .. 11- 2-12 6,985 sd. sh. drlg.
Winlock Oil, No. 1 Win, Montebello, Los Angeles .... 11- 2-12 7,590 completing
Allied Pet., No. 34 Signal, Long Beach, Los Angeles .. 30- 4-12 6,401 sd. sh. drlg.
Dunlap Oil, No. 14 Signal, Long Beach, Los Angeles 24- 4-13 2,402 sd. sh. drlg.
Caminol Co., No. 3-19 Dominguez, Long Beach, L. A. 11- 4-13 8,402 P.B. 7,674
Great Northern Oil, No. 1 Oak, Richfield, Los Ang. 28- 3-9 3,225 idle
Morgan, George, No. 1 Fricke, Yorba Linda, Los Ang. 21- 3-9 2,125 redrlg. 2,060
Master Pet., No. 1 Wright, East Coyote, Orange Co. .. 30- 3-9 5,598 cmtd. 4,260
Union Oil, No. 22 Hole, East Coyote, Orange ..... 22- 3-10 5,388 pump. 75 b.d.
Standard Oil, No. 2-13 Coyote, East Coyote, Orange .. 22- 3-10 4,680 completing
SW. Expl. Co., No. 23 State, Hunt. Beach, Orange .. 10- 6-11 3,998 O.S. drlg.
Orr, Sara, No. 1 Montgomery, Hunt. Beach, Orange .. 3- 5-11 4,494 rig to pump
Pac. Amer. Oil, No. 6 Book, Hunt. Beach, Orange .. 36- 5-11 1,394 sd. sh. drlg.
Tide Water A. O., No. 7 Bryant, Seal Beach, Orange . 11- 5-12 4,370 sd. sh. drlg.
Asphalt Pet., No. 1 Bryant, Seal Beach, Orange ..... 11- 5-12 2,688 sd. sh. drlg.
Thompson, M. N., No. 1 Smith, Costa Mesa, Orange .. 9- 6-10 3,350 gr. sd. drlg.

OKLAHOMA

Week Ended January 27

NORTHERN OKLAHOMA

Caddo County

Sinclair Prairie Oil Co.'s No. 1 Groman, SW NW NW Sec. 1-16-13w. Wlx. 9,179 ft.; set 7-in. csg. 9,167 ft.; T.D. 9,195 ft.; cd. 9,205 ft.; rec. stain oil.

Cleveland County

Sinclair-Prairie's No. 1 Ward, SE SE SE Sec. 30-7-1. Hntn. 6,185 ft.; Vla. 6,408 ft.; open 30 min. at 6,800 ft.; rec. S. W.; P.B. to 6,782 ft.; T.D. 8,322 ft.; D.S.T. 8,236-8,322 ft.; rec. 1,300 ft. S. W.; P.B. 6,225 ft.; ripped 5,445-60 ft.; H.F.W.; D.&A.

Comanche County

Mid Night Oil's No. 1 Howe, NW NW NE Sec. 30-2-13w. O.W.D.D.; O.T.D. 703 ft.; dpnd. to 998 ft.; perf.: swbg.

Creek County

Bryan Pet. Co.'s No. 1 Ah-Say, NE NW NE Sec. 34-14-7. Spd. and S.D.
A. S. Kaplan's No. 1 Anthis, NW NW SE Sec. 12-15-9. Wlx. 3,400 ft.; T.D. 3,406 ft.; H.F.W.; D.&A.
Waite Drlg. Co.'s No. 1 Garrett, NE NE NE Sec. 25-14-10. Drlg. 2,995 ft.

Dewey County

Magnolia Pet. Co.'s No. 1 Fiekes, C SW SW Sec. 31-18-14w. T.D. 6,480 ft.; ran Schlmb.; N.S.

Garfield County

Fain Drlg.'s No. 1 Schnakenburg, NE SE SW Sec. 31-21-4w. Drlg. 5,170 ft.

Garvin County

Duckworth & Jennings' No. 1 Bowie, NW NE SE Sec. 3-4-3. W.O.C. 60 ft.

Grant County

Continental Oil Co.'s No. 1 Krichmar, SE SE NE Sec. 28-28-5w. Drlg.

Hughes County

Hall & Jordan's No. 1-A Barker, SE SE SW Sec. 3-8-9. S.D. 533 ft.
Tom Nix's No. 1-A Warren, SE SE SE Sec. 4-6-8. S.S.O. 903-08 ft.; T.D. 930 ft.; drlg. plug; may recmt.; S.D.
Thompson Bros.' No. 1 Meadors, NE NE NE Sec. 23-9-9. R.U.S.T. 3,230 ft.; H.F. O. in 6 hrs.; S. 28 B.O. in 24 hrs.; T.D. 3,284 ft.; S.W. and P.B. to 3,276 ft.; shot; P.O.P.
Walker & Johnson's No. 1 Rogers, NE NE NE Sec. 24-7-9. S.S.O. 585-85 ft.; S.D. 615 ft.

Kay County

Marland Oil Co.'s No. 1 Kreger, SE SE NE Sec. 4-25-2w. Rig.
Marland Oil Co.'s No. 1 Woods, NW NW SW Sec. 19-25-1w. Rig.
Malarnee Oil Co.'s No. 1 Harris, C SW NE Sec. 14-25-1. S.S.O. 3,583 ft.; T.D. 3,787 ft.; 8-in. 3,743 ft.; W.O.C.

Kingfisher County

Phillips Pet. Co.'s No. 1 Drape, C NW SE Sec. 30-18-5w. Bldg. rig.

Kiowa County

Frank Dillard et al's No. 1 Hobbs, SE SE NW Sec. 35-6-17w. Set 6⅝-in. 525 ft.; T.D. 690 ft.
C. J. Hagerling's No. 1 Kimray, SW SW NW Sec. 36-5-18w. T.D. 1,604 ft.; D. &A.

Lincoln County

R. M. Purcell et al's No. 1 Wolcott, NW NW NW Sec. 2-13-4e. R.O.G.

Logan County

Geo. Travis et al's No. 1 Teter, NW NW SW Sec. 24-17-2. Mch.
Youngblood et al's No. 1 Wright, NE NE SE Sec. 32-16-6. W.O. tools 3,950 ft.

McIntosh County

Phillips' No. 1 Blankenship, C SW NW Sec. 37-10-13. Drlg. 2,575 ft.

Muskogee County

R. Garrett's No. 1 Escoe, SW SW SE Sec. 16-13-17. S.D. 968 ft.

Noble County

Franks & Ellis' No. 1 Stranka, SW SW NW Sec. 35-24-1w. Drlg. 1,665 ft.
Marland Oil Co.'s No. 1 Rosecrants, NW NW SE Sec. 14-24-1e. Loc.

Osage County

W. M. McKnab's No. 1 Osage, NW NE SW Sec. 15-29-8. T.D. 2,400 ft.; S.D.; repairs.

Pawnee County

W. H. Atkinson's No. 1 Wilkerson, NW NE NW Sec. 14-22-4. Miss. 3,614 ft.; T.D. 3,620 ft.; D.&A.

Payne County

Gardner Pet. Co.'s No. 1 Wetzel, NE SW SE Sec. 2-18-1e. S.D. 1,535 ft.
H. N. Greis, Deep Rock Oil Corp., and Helmrich & Payne's No. 1 Kramer, NW NW SE Sec. 24-17-1e. Rig.

Pontotoc County

Crescent Oil Co.'s No. 2 Thompson, NE NW SW Sec. 29-3-4. T.D. 460 ft.; S.D.

Pottawatomie County

Alma Oil Co.'s No. 1 Lyday, SE NE SW Sec. 30-6-5. R.U.R.

Seminole County

Stanolind O. & G. Co.'s No. 1 Aldridge, NW NE SE Sec. 32-9-8. R.U.R.

SOUTHERN OKLAHOMA

Atoka County

Brookshire et al's No. 1 Jones, C SW NW Sec. 29-3s-12. M.I.M.

Carter County

W. F. Turner's No. 1 Smith, NE SW SE Sec. 16-3s-1w. S.D. 3,640 ft.

Choctaw County

Clyde Ross et al's No. 1 Hardy, SE SE NW Sec. 21-7s-15. Sd. 1,785 ft.; T.D.; S.D.

Jackson County

English Drlg. Co.'s No. 1-A Aetna Life, SE SE NE Sec. 26-3n-20w. S.D. 1,610 ft.; csg.
Jones & Robinson's No. 1 Neal, SW SW SW Sec. 8-1s-20w. Rig.

Jefferson County

Fred Land et al's No. 1 Barrett, NE SE SE Sec. 14-6s-6w. Sd. 1,852 ft., S.O.; D. P. stk. at 1,100 ft.; T.D. 1,890 ft.; S.D.

Marshall County

Johnson et al's No. 1 Godfrey, SW SE NE Sec. 14-6s-6e. Vla. 2,627 ft.; S.S.O.; T.D. 4,455 ft. in sd.; S.O.; S.D.
May Oil Corp.'s No. 1 Sacrea, SW NE SW Sec. 17-5-5. S.D. 326 ft.
Pure Oil's No. 1 Little, W½ NE SE Sec. 28-5s-7e. Drlg. 3,240 ft.

Stephens County

Edwin Bristow et al's No. 1-A Damion, SE NW SW Sec. 25-2s-6w. S.D. 740 ft.

KANSAS

Week Ended January 27 (Descriptions are East unless marked otherwise)

Barton County

Phillips' No. 1 Wondra, CWL SW NE Sec. 15-17-12w. Lans. 3,049 ft.; 700 ft. O.I.H., 10 hrs.; T.D. 3,140 ft.

Butler County

Allison & Talbott's No. 1 Zink, SE SE NE Sec. 32-29-5. S.D. 1,550 ft.
Davidson & Flack's No. 1 Wilhite, NE NE SW Sec. 16-27-7. S.D. 665 ft.
Natl. Ref. Co. No. 1 Lankford, SE SE NE Sec. 23-27-5. Drlg. 1,960 ft.
Natl. Ref. Co.'s No. 1 Smith, NE NW SE Sec. 9-28-5. Drlg. 1,200 ft.
C. H. Pechin et al's No. 1 Hartenbower (O.W.D.D.), NW NW NW Sec. 16-29-6. O.T.D. 3,257 ft.; Peru sd. 2,476-2,530 ft.; C.O. to 1,200 ft. and S.D.

Cowley County

Atlantic and Sinclair's No. 1 Smith, SE SE NW Sec. 33-33-4. B.R.
Crown Pet. Co. et al's No. 1 Dunn, NW NW SE Sec. 19-34-6. Cmtd. 10-in. 108 ft.; S.D. 200 ft.
Garden's No. 1 Rahn, SW SW NW Sec. 13-34-5. Bart. 2,936 ft.; T.D. 3,425 ft., in. Arb.; F. 120 B.O. 1st hr.; S.I.
Markey & Talbot's No. 1 Anderson, C N½ NE NW Sec. 21-30-3. S.D. 450 ft.
Mission Oil's No. 1-A Hunt, SW SW NE Sec. 16-34-5. S.D. 1,050 ft.
Mitchell Drlg.'s No. 1 Batchelder, CEL SW¼ Sec. 27-30-6. Arb. 3,320-50 ft., T.D.; N.S.; S.D.O.

Ellis County

J. J. Hall's No. 1 Smith-A, C W½ NW NE Sec. 13-12-16w. R.U.

Ellsworth County

Cities Service Oil Co.'s No. 1 Padlen S.O. 2,836 ft.; T.D. 3,113 ft.; P. 595 B. W. and no oil in 21 hrs.; P. 25 B.O. and 589 B.W. in 22 hrs.; drld. cmt. and perf.; 350 ft. W.I.H. in 4 hrs.; P. B. 2,881 ft.; no shut off.
Phillips Pet. Co.'s No. 1 Sturn, SE SE NW Sec. 36-17-10w. Loc.

Greenwood County

A. A. Hinze et al's No. 1 Hester, NW SW NE Sec. 1-22-12. S.D. 510 ft.
Rex & Morris' No. 1-A Wright, C N½ Lot 16, Sec. 30-28-8. M.I.M.
C. L. Sheedy et al's No. 1 Hook, NW NW NW Sec. 4-22-10. S.D. 760 ft.

Jefferson County

McLaughlin Sons, Inc.'s No. 1 McLaughlin. SW NE NW Sec. 4-10-20. T.D. 1,915 ft.; whpstk. 1,858 ft.; fsg. 1,915 ft.

Johnson County

Lambertson et al's No. 1 Green, SW NE SW Sec. 25-14-22e. Burg. 1,038 ft.; S. S.O.; cmt. 7-in. 1,040 ft. and S.D.
McCain's No. 1 Doan, C SW NW Sec. 34-12-22. S.D. 940 ft.

McPherson County

Aladdin Pet. Co.'s No. 1 Bitikofer, CNL NE NW Sec. 1-20-1w. Cellar.
Central Pet.'s No. 1 Swanson, C N½ NW NW Sec. 18-20-5w. Miss. 3,304-19 ft.; good sat.; R.U.S.T.; T.D. 3,348 ft.; F. 375 B.O. in 2½ hrs.; csg.
Westgate-Greenland's No. 1 Chindberg, C N½ NE SE Sec. 18-18-1w. T.D. 2,795 ft.; P.B. 2,794 ft.; drld. cmt. to 2,808 ft.; incr. wtr.; D.&A.

Marion County

Harrington & Lorieaux's No. 1 Belton, SE SE NE Sec. 30-17-4. S.D. 105 ft.
Polhamus et al's No. 1 Noone, NW NW SE Sec. 18-18-3. S.D. 2,785 ft.
Troxwell et al's No. 1 Bezdek, NE SW SW Sec. 32-17-4. Miss. 2,396 ft.; 7-in. 2,401 ft.; S.D. 2,443 ft.

Rice County

Mid-Plains Oil Co.'s No. 1 Newkirk, CSL SW SW Sec. 14-18-7w. Drlg. 2,812 ft.

Rooks County

Seaney & Clampitt's No. 1 Morrison, CS L SW NE Sec. 32-10-17w. Loc.

Russell County

I. W. Murfin et al's No. 1 St. Aubyan, CSL SW SE Sec. 1-15-15w. Drlg. 1,175 ft.
Ray Shaffer et al's No. 1 Shaffer, NE NE SW Sec. 9-13-11w. S.D. 1,315 ft.
Webb & Wakefield's No. 1 Schmidtberger, CNL NE SW Sec. 17-13-15w. Drlg. 760 ft.

Stafford County

Shell Oil's No. 1 Smith, SE SE NW Sec. 9-21-11w. S.S.O. in core at 3,410-15 ft.; R.U.S.T. 3,415 ft.; T.D. 3,462 ft.; P.B. 3,388 ft.; flw. 82 B.O. in 6 hrs. by hds. No test.

MISSOURI

Adair County

J. W. Ettington et al's No. 1-A Clark, NE NE SE Sec. 8-63-14w. S.D. 260 ft.
Ettington & Holmes' No. 1 Kapps, SW SW SW Sec. 31-64-15w. S.D. 190 ft.

Bolinger County

Delmund Oil's No. 1 Cooper, SE SE SE Sec. 14-29-9e. T.D. 1,850 ft.; S.D.

Buchanan County

Miller et al's No. 1 Corrough, C SE SE Sec. 24-57-35w. Arb. 2,245 ft.; T.D. 2,307 ft.; H.F.W.; D.&A.

Charlton County

L. E. Mummert et al's No. 1 Rickert, NW NE SE Sec. 26-54-20w. Loc.

DeKalb County

E. H. Lawhon et al's No. 1 Gottschall, C SE SE Sec. 18-59n-32w. Loc.
Geo. W. Moore's No. 1 McQuate, NE SW SW Sec. 11-57n-31w. Miss. 1,075 ft.; S.D. csg. 1,500 ft.

Holt County

Brin & Nathan's No. 1 Decker, C NW NW Sec. 1-61-38w. T.D. 1,030 ft.; S.D. for csg.

Jackson County

Hulse & Christopher's No. 1 Wiston, NE NW SE Sec. 32-49-32w. T.D. 510 ft.; shot in sd.; no incr.; may dpn.

Knox County

W. H. Oberithier et al's No. 1 Campbell,

C NE Sec. 18-61-12w. Hntn. 575 ft.; drlg. 576 ft.

Mercer County

Geo. W. Moore's No. 1 Moss, NW SW SE Sec. 30-65-24w. Hntn. 1,273 ft.; T.D. 1,879 ft.; fag.

Platte County

Bradford & Sons' No. 1 Renner, NW NE SW Sec. 5-50-33w. Sg. sd. 383-403 ft.; S.G.; T.D. 541 ft., in lower Bart. sd.; D.&A.

Roach-Vincent et al's No. 1 Dillingham, NE SW Sec. 16-53-34w. S.D. 1,025 ft.; to resume when weather permits.

Randolph County

A. A. Ash et al's No. 1 Alexander, C SE Sec. 14-55-13w. Loc.

Schuyler County

T. E. Baldwin's No. 1-A Johnson, NW NE NE Sec. 21-65-15w. T.D. 1,069 ft.; prep. to test S.O. in Hntn. L.

IOWA

Fremont County

Oscar Gruber's No. 1 fee, C SW SE Sec. 8-67n-40w. Base Ft. Scott 750 ft.; T.D. 1,065 ft.; pulled 6-in. and rmg. to 965 ft.

Union County

Phillips Pet. Co.'s No. 1 Creston, C SE NE Sec. 31-71-30w. Drlg. 1,644 ft.

NEBRASKA

Cass County

Golden Rod Oil Co. No. 1 Sparer, SE SE SE Sec. 8-11-13e. S.D. 1,205 ft. in Vla. L.

Dakota County

Peder Skriver's No. 1 Armour, NE NE NE Sec. 33-28-8. T.D. 1,100 ft.; S.D.

Dawes County

G. E. Mitchell's No. 1 Palmer, NW NW SW Sec. 1-33-50w. (O.W.D.D.); O.T.D. 2,964 ft.; R.U. to D.D.

Fillmore County

Dan Kornfeld's No. 1 Mathis, NE NE NE Sec. 22-5-1w. S.D. 2,003 ft.

Keith County

California-Nebraska Oil, Ltd.'s No. 1 Guststuehm, NW NW NW Sec. 21-14-37w. Dak. 2,772 ft.; S.O. 2,895-2,901 ft.; cd. 3,258-61 ft.; S.S.O.; S.D. 3,300 ft.

Pawnee County

Blaser & Hoerman's No. 1 Wilson, NE NW NW Sec. 4-1-10. S.S.O. 470-71 ft., drlg. 476 ft.

Richardson County

Pawnee Royalty's No. 1 Boice, CSL N½ NE NE Sec. 18-1-16e. Hntn. 2,276 ft.; dpnd. to 2,292 ft.; P.&F. 100 B.O. and 300 to 400 B.W. daily.

Pawnee Royalty's No. 1 Myers, C NW NW Sec. 24-1-1e. Drlg. 3,005 ft.

Stephens & Uhri's No. 1-A Ogle, NW SE SE Sec. 9-1-14. Rotary tools on ground.

Stephens & Uhri's No. 1 Stauffer, SW SW NE Sec. 21-1n-13e. S.D. 475 ft.

Scotts Bluff County

Albert Wood et al's No. 1 McHenry, SE NE NE Sec. 33-23-57w. T.D. 625 ft.; S.D.

J. A. Fairy Pet.'s No. 1 McCulley, C SE SE Sec. 35-23-58w. S.D. 2,035 ft.

LOUISIANA

N. LOUISIANA WILDCATS

Bienville Parish

Harry Hanbury's No. 1 Holston unit, 70 ft. from NE cor. SW NE Sec. 29-18-6. Drlg. sd.&sh. 4,380 ft.

Bossier Parish

Gulf Ref. Co.'s No. 20 C. B. Hodges, 3,131 ft. N, 1,388 ft. W, SE cor. Sec. 24-16-12. T. Pett. L. 5,298 ft.; T. Travis Pk. 5,590 ft.; T.D. 7,689 ft.; hole clean; cg. 8,235 ft.; T. Cttn. Vlly. 7,971 ft.

Union Prod. Co.'s No. 1-B Thigpen-Herold, 1,275 ft. S, 1,279 ft. E, NW cor. Sec. 19-17-11. Drlg. 1,730 ft.

J. K. Wadley's No. 1 Vance est., 1,739 ft. N, 277 ft. E, SW cor. Sec. 4-19-13. Cg. 2,690 ft.

Caddo Parish

Hugh Carney's No. 1 Burton, 2,279 ft. S, 773 ft. W, NE cor. NW Sec. 1-20-16. Set 10-in. csg. 80 ft.; set 7-in. csg. 1,380 ft.

D. T. Cauble's No. 1 Darnell, Sec. 17-22-16. Set 10-in. csg. 80 ft.; T.D. 2,125 ft.; S.D.; rig repair.

Mrs. O. P. Clements' No. 2-B Caddo Lv. Bd., Sec. 5-20-16. T. sd. 1,860 ft.; set 6-in. csg. 2,219 ft.; W.O.S.R. 2,305 ft.

H. H. Dillard's No. 1 Dillard, 595 ft. W, 50 ft. S, NE cor. SW SE Sec. 1-20-16. R.U.

Ferguson & Page's No. 3 Pala Oil Co., Sec. 1-20-16. R.U.

Magnolia Pet. Co.'s No. 29 Dillon, Sec. 24-21-15. Set 6-in. csg. 1,528 ft.; W.O.C.

E. E. Marr's No. 1 Brown, Sec. 11-20-16. Set 10-in. csg. 100 ft.; set 7-in. csg. 1,414 ft.; T.D. 1,600 ft.; acd. with 6,000 gal.; W.O.S.R.

J. F. Mechem's No. 2 Crystal fee, 400 ft. S, 640 ft. W NE cor. Sec. 14-21-16. Set 8-in. csg. 1,012 ft.; tstd. dry; set 5⅛-in. csg. 2,270 ft.; T.D. 2,283 ft.; W.O.C.

Lee Miller's No. 1 Crystal fee, Sec. 13-21-16. T.D. 2,277 ft.; Set 5½-in. csg. 2,265 ft.; tstg.

E. O. Mitchell's No. 1 fee, Sec. 12-20-16. Loc.

J. Ray Murray's No. 1 Slattery, 314 ft. N, 180 ft. E, SW cor. SE Sec. 21-21-15. Set 6-in. csg. 1,493 ft.; T.D. 1,661 ft.; acd. 2,000 gal.; pmpd. dry; arng. dpn.

O'Brien Bros.' No. 1 Bradford et al, Sec. 24-21-15. Set 10-in. csg. 100 ft.; set 6-in. csg. 1,450 ft.; W.O.S.R.; T.D. 1,600 ft.

L. R. Skidmore's No. 1 Landau, 150 ft. N, 220 ft. E, SW cor. Sec. 1-20-16. Set 10-in. csg. 80 ft.; set 7-in. csg. 1,360 ft.; T.D. 1,380 ft.; W.O.C.

Stanolind O. & G. Co.'s No. 2 Alexander, 670 ft. E, 2,461 ft. S, NW cor. SE Sec. 21-21-15. R.U.

Stanolind O. & G. Co.'s No. 1, 131 Dillon hrs., C SE NE Sec. 14-21-15. Ran Schmb. 9,109 ft.; T. Smkvr. L. 8,952 ft.; ran Schlum. 10,164 ft.; T. cap rock 10,148 ft.; igneous rock 11,419 ft.; T. salt 10,159 ft.; base salt 11,405 ft.; T.D. 11,419 ft.; pulled 4,245 ft. of 7-in. csg.; milled 9⅝-in. csg. 3,930-36 ft.; perf. and completing as gasser.

Stanolind O. & G. Co.'s No. 3 Noel, Sec. 13-21-15. Drlg. 1,497 ft.

Joe G. Strahan's No. 2 Hart, Sec. 29-21-16. Set 10-in. csg. 60 ft.; S.D. 1,800 ft.

Jack Terrell's No. 1 Welch, Sec. 3-20-16. Will set csg. 947 ft.

Alf Tillman's No. 1 Greer, 50 ft. N, 60 ft. W, SE cor. NW NW Sec. 12-20-16. Set 6⅝-in. csg. 1,360 ft.; acd. with 2,000 gal.; tstg.; T.D. 1,520 ft.

Sloan Wells' No. 1 Stiles, 3,734 ft. N, 1,706 ft. E, SW cor. Sec. 32-21-16. Set 10-in. csg. 340 ft.; W.O.C.

Whitehurst Drlg. Co.'s No. 1 Shreveport Pet. Co., 990 ft. W, 493 ft. N, SE cor. Sec. 2-20-16. Set 10-in. csg. 80 ft.; set 7-in. csg. 1,350 ft.; acd. with 2,000 gal. and W.O.S.R.; T.D. 1,554 ft.

Claiborne Parish

Sugar Creek Synd.'s No. 1 Robinson, 690 ft. W, 570 ft. S, NE cor. NE SE Sec. 32-20-5. Set 9⅝-in. csg. 570 ft.; drlg. 5,407 ft.

De Soto Parish

Dewey Jaun's No. 1 Frost Lbr. Ind., 6,600 ft. SE cor. SW Sec. 14-22-3e. Set 10-in. csg. 545 ft.; T.D. 2,540 ft.; S.D.; W.O. fuel.

La Salle Parish

H. L. Hunt and Ark. Fuel Oil Co.'s No. 1 Goodpine Lbr. Co., C NW NW Sec. 18-10n-3e. Fsg. 3,030 ft.; blew out and bridged at 1,200 ft.; drld. bridge and twisted off 2,000 ft. D.S.; left wall hook in hole while fsg.; P.B. 900 ft. whpstk. 900 ft.; ran Schlmb. to 3,039 ft.; drlg. 5,365 ft.

Morehouse Parish

Union Prod. Co.'s No. 1-A Tensas-Delta, 1,894 ft. W, 1,584 ft. S, NE cor. SE Sec. 8-22-4. Set 20-in. csg. 125 ft.; 16-in. csg. 712 ft.; set 10¾-in. csg. 2,448 ft.; T. salt 8,114 ft.; T.D. 10,475 ft., hd. sd.; P.B. 2,250 ft.; drld. out to 2,353 ft.; perf. 2,163-2,225 ft.; tstg.

Sabine Parish

Ed Bailey's No. 1 Hale, 330 ft. NW cor. NE NW Sec. 6-7-12. S.D. 1,960 ft.

R. Chestnutt's No. 1 Walden, 330 ft. SE cor. NE NE Sec. 27-10-13. Set 10-in. csg. 42 ft.; set 7-in. csg. 1,458 ft.; W.O.C.; T.D. 1,460 ft.

John Derryberry et al's No. 1 Manton, 330 ft. NE cor. NW SW Sec. 34-7-13. 6-in. csg. 2,450 ft.; T.D. 2,986 ft.; acd. 2,000 gal.; W.O.S.R.

Hunter Co.'s No. 3-B Sabine, C SE NW Sec. 17-7-13. Set 6-in. csg. 2,111 ft.; W.O.C.

N. B. Livingston's No. 1 Bowman Hicks, 660 ft. SE cor. SW Sec. 36-9-14. Set 10-in. csg. 110 ft.; D.S.T. 3,125-59 ft.; ¼-in. cks. T.&B.; 35 min.; rec. 150 ft. mud and S.G.; rng. 5½-in. csg. 3,508 ft., T.D.; tstd. gas 3,462-3,535 ft.; perf. between 3,134 ft. and 3,462 ft. and tstd. est. 1,000,000 cu. ft. gas, S.O. and S.W.; will test 3,134-50 ft. and 3,188-96 ft.

Major Oil Co.'s No. 2 Sabine, 330 ft. SE cor. SE SW Sec. 5-7-13. R.U.

B. F. Phillips' No. 1 Blankenship, 330 ft. S, 202 ft. W, NE cor. SE NW Sec. 13-9-12. Reported S.G. 3,230 ft.; set 7-in. csg. 3,200 ft. (cor.); S.G. 3,216-25 ft.; T.D. 3,685 ft.; swbg. to test.

Claude H. Smith's No. 1 Whitney Corp., 330 ft. N and E, C Sec. 24-10-14. Set 10-in. csg. 42 ft.; S.D.

J. E. Stack's No. 1 Weber, 330 ft. SE cor. SW NE Sec. 8-7-13. Set 10-in. csg. 42 ft.; abd.; will not drill.

Texas Co.'s No. 3-B Glauque, 600 ft. S, 660 ft. E, C Sec. 10-7-13. Crooked hole; skd. over 60 ft. N and began 2nd hole; set 10-in. csg. 42 ft.; set 6-in. csg. 2,021 ft.; acd. with 4,000 gal.; tstg.; T. D. 2,450 ft.

J. H. Thames' No. 1 Long Bell, 330 ft. SW cor. NE SE Sec. 5-8-13. T.D. 1,708 ft.; set 7-in. csg. 1,680 ft.; did not tst. 1,708 ft.; S.D. 1,722 ft.; W.O.

Lee Whitehurst's No. 1 Summers, 1,210 ft. N, 440 ft. W, SE cor. NE Sec. 14-7-13. Set 6-in. csg. 3,131 ft.; tstd. S.O.; R.U.C.T.; to dpn.

Union Parish

Memphis Nat. Gas Co.'s No. 4 Lankford, Sec. 3-21-3. Set 12-in. csg. 163 ft.; W.O.C.

Memphis Nat. Gas Co.'s No. 9 Lankford, Sec. 26-22-3. Set 12-in. csg. 167 ft.; W.O.C.

Southern Carbon Co.'s No. 35 Grayling, Sec. 17-21-4. Set 8-in. csg. 730 ft.; set 6-in. csg. 2,075 ft.

We Hope G. & O. Co.'s No. 9 Frost Lbr. Ind., Sec. 24-22-3. Set 6-in. csg. 2,082 ft.

We Hope O. & G. Co.'s No. 11 Frost Lbr. Ind., Sec. 14-22-3. R.U.

H. L. Woods' No. 3 Union Power, Sec. 29-21-3. R.U.

Webster Parish

Hassie Hunt's No. 2 Coyle, C SW SE Sec. 22-21-10, No Hllwy. sd.; P.B.; set 5,918 ft.; T.D. 6,294 ft.; rocking with gas and tstg.

Hunt Oil Co.'s No. 1 Gains, 50 ft. NW C NW NE Sec. 30-21-9. Set 9⅝-in. csg. 5,615 ft.; no Hllwy. sd.; drlg. sh. 6,675 ft.

Hunt Oil Co.'s No. 1 Jordan, 660 ft. N, 560 ft. W, SE cor. NE Sec. 31-21-10. Drlg. sh.&L. 3,460 ft.

Quad Oil Co.'s No. 2 Gray, 730 ft. NW cor. SW¼ Sec. 26-21-10. R.U.

SOUTH LOUISIANA FIELDS

Abbeville—Vermilion Parish

Continental Oil Co.'s No. 1 David Meaux, Sec. 9-12s-3e. T.D. 11,359 ft.; T. gas sd. 11,318 ft.; D.S. stk.; P.B. and side-tracked; drlg. sh. 11,545 ft.

Continental Oil Co.'s No. 1 DeMary, Sec. 17-12s-3e. T.D. 10,624 ft.; 6-in. csg. on bttm.

Continental Oil Co.'s No. 1 Franciol, Sec. 67-12s-3e. Drlg. sh. 7,806 ft.

Continental Oil Co.'s No. 1 Motty, Sec. 18-12s-3e. T.D. 10,444 ft.; fsg.

Stanolind O. & G. Co.'s No. 1 LeBoeuf, Sec. 58-12s-3e. Drlg. 3,955 ft.

Anse La Butte—St. Martin Parish

Glassell & Glassell's No. 1 Breaux, Sec. 117-9s-5e. T.D. 5,685 ft.; 7-in. csg. 5,500 ft.

Emer Line Oil Co.'s No. 1 Nickerson, Sec. 86-9s-5e. Drlg. sh. 1,300 ft.

Bancroft—Beauregard Parish

Republic Prod. Co.'s No. 14 Columbia Ld. Co., Sec. 21-6s-13w. T.D. 7,287 ft.; I.P. 208 B.P.D.; 5/32-in. ck.

Republic Prod. Co.'s No. 15 Columbia Ld. Co., Sec. 21-6s-13w. Loc.

Republic Prod. Co.'s No. 4 Lutcher Moore, Sec. 16-6s-13w. T.D. 10,019 ft.; 5½-in. csg. 7,355 ft.

Barataria—Jefferson Parish

California Oil Co.'s No. 1 Danciger-State, Sec. 2-16s-23e. Loc.

California Oil Co.'s No. 1 Zeringue-Community, Sec. 2-16s-23e. Loc.

Carter, Perrin & Brian's No. 1 Ruttley Wiseman, Sec. 2-16s-23e. Drk.

Geo. Conover's No. 1 Conover Community, Sec. 22-15s-23e. Loc.

Fohs Oil Co.'s No. 1 Conzelman, Sec. 22-15s-23e. Loc.

Gulf Oil Corp.'s No. 1 Rathborne Co., Sec. 2-16s-23e. Top O.S. 8,200 ft.; T.D. 8,210 ft.; run csg.

Bateman Lake—St. Mary Parish

Texas Co.'s No. 3 State, Sec. 16s-12e Drlg. sd.&sh. 7,000 ft.

Texas Co.'s No. 3 Wax Bayou, Sec. 21 16s-12e. Drlg. sh. 10,830 ft.

Texas Co.'s No. 4 Wax Bayou, Sec. 21-16s-12e. Drlg. sh. 10,197 ft.

Baton Rouge—East Baton Rouge Parish

Guaranty Oil Co.'s No. 2 Morgan, Sec. 65-7s-1w. T.D. 6,530 ft.; 5½-in. csg. 6,450 ft.; swbd. S.W.; S.D.

Wm. Helis' No. 4-B Duplantier, Sec. 68-7s-1w. 10¾-in. csg. 2,049 ft.; drlg. sh. 4,935 ft.

Wm. Helis' No. 7 Nelson, Sec. 36-7s-1w T.D. 6,485 ft.

Lisbon-Iberia Oil Co.'s No. 3-A College Town Community, Sec. 68-7s-1w. Drlg sh. 4,330 ft.

Sugarfield Oil Co.'s No. 1 Kizer Community, Sec. 46-7s-1e. 10¾-in. csg. 1,415 ft.; T.D. 7,356 ft.; perf. csg. 4,127-34 ft.; rec. S.W.

Bay St. Elaine—Terrebonne Parish

Texas Co.'s No. 3 L.L.&E., Sec. 18-22s-18e. Loc.

Bayou Blue—Iberville Parish

Superior Oil Co.'s No. 1 Schwing Lbr Co., Sec. 74-9s-10e. Drlg. sh. 6,220 ft.

Bayou Choctaw—Iberville Parish

Standard Oil Co. of La.'s No. 12 Wilbert, Sec. 53-9s-11e. Ran 10¾-in. csg.; T.D. 5,452 ft.; sdtrkd.; T.D. 3,823 ft.; oil sd. 3,740-3,822 ft.; 7-in. csg. 3,828 ft.; perf. csg. 3,800-20 ft.

Bayou des Glaise—Iberville Parish

Humble O. & R. Co.'s No. 2-B Wilberts, Sec. 78-8s-8e. 10¾-in. csg. 2,854 ft.; S.D. 4,874 ft.

Black Bayou—Cameron Parish

Shell Oil Co., Inc.'s No. 43 Watkins, Sec 7-12s-12w. T.D. 5,519 ft.; 7-in. csg. 5,447 ft.; P.B. 8,235 ft.; perf. csg. 5,215-35 ft.; I.P. 522 B.F.P.D., 45% S.W.; 15/64-in. ck.

Caillou Island—Terrebonne Parish

Texas Co.'s No. 62 State-Caillou Island, Sec. 17-23s-20e. 10¾-in. csg. 1,473 ft.; T.D. 5,955 ft.; run 7-in. csg.

Texas Co.'s No. 63 State, Sec. 17-23s-20e. Cg. salt 4,122 ft.

Cameron Meadows—Cameron Parish

Magnolia Pet. Co.'s No. 26 Cameron Meadows, Sec. 21-14s-13w. T.D. 5,485 ft.; rmg.

Chacahoula—La Fourche Parish

Sun Oil Co.'s No. 1 Cypress, Sec. 75-15s-15e. 13⅜-in. csg. 1,842 ft.; T. salt 6,072 ft.; T.D. 6,088 ft.; P.B. 2,100 ft.; sdtrkd.; T.D. 6,553 ft.; fsg.; sdtrkd.; T.D. 5,544 ft.; P.B. to sdtrk.; T.D. 7,271 ft.; sdtrkd.; drlg. sd.&L. 7,401 ft.

Sun Oil Co.'s No. 6 Dibert, Stark & Brown, Sec. 70-15s-15e. T.D. 7,295 ft.; W.O.C.

Chalkley Field—Cameron Parish

Humble O. & R. Co.'s No. 1 Cameron Sch. Bd., Sec. 16-12s-6w. Loc.; abd.

Humble O. & R. Co.'s No. 1-A Sweet Lake Ld. & Oil Co., Sec. 13-12s-7w. Drlg. sh. 2,085 ft.

Humble O. & R. Co.'s No. 6 Sweet Lake Ld. & O. Co., Sec. 8-12s-6w. T.D. 8,457 ft.; sdtrkd.; drlg. sh. 8,361 ft.

Shell Oil Co., Inc.'s No. 6 Hanzen, Sec. 21-12s-6w. T.D. 8,951 ft.; perf. csg. 8,910-33 ft.; tests.

Union Sulphur Co.'s No. 1 Sweet Lake Ld. Co., Sec. 13-12s-7w. Drlg. sh. 2,110 ft.

Cheneyville—Rapides Parish

S. W. Richardson's No. 9 Weil, Sec. 53-1s-2e. Drlg. sdy. sh. 3,675 ft.

Creole—Cameron Parish

Superior Oil Co.'s No. 10 State-Gulf of Mexico, Twp. 15s-8w. T.D. 8,607 ft.; sdtrkd.; drlg. sd.&sh. 4,165 ft.

Darrow—Ascension Parish

Humble O. & R. Co.'s No. 28 Community, Sec. 30-10s-2e. R.U.

Humble O. & R. Co.'s No. 29 Community, Sec. 30-10s-2e. Loc.

Humble O. & R. Co.'s No. 17 Gumbel, Sec. 36-10s-2e. T.D. 8,570 ft.; P.B. 7,389 ft.; sdtrkd.; T.D. 7,503 ft.; P.B.; sdtrkd.; drlg. sh. 7,260 ft.

Kiva Oil Co. No. 1 Duplessis, Sec. 69-10s-2w. S.D. 2,523 ft.

Dog Lake—Terrebonne Parish

Texas Co.'s No. 10 State, Sec. 1-22s-15e. Drlg. sh. 6,812 ft.

Eola—Avoyelles Parish

Amerada Pet. Corp.'s No. 1 Dentetal unit, Sec. 1-2s-2e. T.D. 8,572 ft.; 5½-in. csg. 8,571 ft.; perf. csg. 8,566-70 ft.; I.P. 508 B.P.D.; ¼-in. ck.

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Bradford, Pa., U. S. A.

Amerada Pet. Corp.'s No. 2 Dent, Unit 2, Sec. 10-2s-2e. Drlg. sh. 1,430 ft.
Amerada Pet. Corp.'s No. 1 Giglio, Sec. 6-2s-3e. Drlg. sh. 7,430 ft.
Amerada Pet. Corp.'s No. 3 Irion, Sec 6-2s-3e. R.U.
Amerada Pet. Corp.'s No. 1 Monchau, Sec. 1-2s-2e. Loc.
Amerada Pet. Corp.'s No. 1 R-3 Sclater, Sec. 1-2s-2e. T.D. 8,583 ft.; 5½-in. csg. 8,582 ft.; perf. csg. 8,572-80 ft.; I.P. 403 bbl., 17 hrs.; ¾-in. ck.
Amerada Pet. Corp.'s No. 1 E. O. Sellers, Sec. 1-2s-2e. Drlg. sh. 8,117 ft.
Gulf Oil Corp.'s No. 1 Mouliere, Sec. 1-2s-2e. R.U.
G. W. Kennedy's No. 1 Eola Irion, Sec. 1-2s-3e. 5½-in. csg. 8,568 ft.; T.D. 8,568 ft.; perf. csg. 8,557-63 ft.
Magnolia Pet. Co.'s No. 1 O. Q. Foster Sec. 6-2s-3e. Loc.
S. W. Richardson's No. 8 Haas Inv. Co. Sec. 7-2s-3e. Drlg. sh. 8,057 ft.
Sun Oil Co.'s No. 3 Townsend, Sec. 8-2s-3e. Drlg. sh.&L. 7,880 ft.

Fausse Point—Iberia Parish

Sun Oil Co.'s No. 1 Planters Lbr. Co., Sec. 27-11s-8e. Loc.
Texas Co.'s No. 7 State, Sec. 35-11s-9e. R.U.

Gibson—Terrebonne Parish

Shell Oil Co., Inc.'s No. 8 Pelican, Sec. 35-17s-15e. Driving piling.

Golden Island—Plaquemines Parish

Texas Co.'s No. 40 State-Garden, Sec. 38-23s-33e. Spd.
Texas Co.'s No. 41 State, Sec. 38-23s-33e. Drlg. sh. 1,530 ft.

Golden Meadow—La Fourche Parish

Bateman Drlg. Co.'s No. 1 Harry Louviere, Sec. 9-19s-22e. T.D. 5,560 ft.; 5¾-in. csg. 5,260 ft.; perf. csg. 5,150-80 ft.; S.D.
Bennett O. & R. Co.'s No. 1 Philozate, Sec. 12-19s-22e. Drlg. sh. 8,483 ft.
Berkshire Oil Co.'s No. 11 Nicol, Sec. 2-19s-22e T.D. 2,680 ft.; 7-in. csg. 2,680 ft.; perf. csg. 2,620-62 ft.
Brown & Woods' No. 1 S. Hogan, Sec. 9-19s-22e. T.D. 2,710 ft.; P.B. to 1,500 ft.; sdtrkd.; T.D. 2,672 ft.; 7-in csg. on bttm.; perf. csg. 2,650-65 ft.; would not flow; S.D.
Taylor Fithian's No. 1 Cheramie, Sec. 12-19s-22e. Drk.
Taylor Fithian's No. 1 Redstock, Sec. 2-19s-22e. T.D. 2,691 ft.; 5½-in. csg. 2,687 ft.; perf. csg. 2,646-60 ft.; I.P. 12 B.P.D.; pmpg.
Taylor Fithian's No. 1 Martin, Sec. 12-19s-22e. Spd.
Wm. Helis' No. 3 Gaspard, Sec. 9-19s-22e. 6-in. csg. 2,655 ft.; T.D. 2,664 ft.; W.O.S.R.
Geo. Lilly's No. 1 Collins, Sec. 12-19s-22e. Drlg. sdy. sh. 2,987 ft.
Jim McMurray Prod. Co.'s No. 2 Collins, Sec. 12-19s-22e. Drlg. 258 ft.
M. H. Marr et al's No. 2 B. & D. unit, Sec. 17-19s-22e. Loc.
M. H. Marr et al's No. 3 Terrebonne, Sec. 9-19s-22e. R.U.
M. H. Marr et al's No. 4 Adam Terrebonne, Sec. 9-19s-22e. Drk.
Martex Oil Co.'s No. 1-B Rebstock, Sec. 2-19s-22e. 10¾-in. csg. 668 ft.; drlg. sh. 2,200 ft.
Martex Pet. Co.'s No. 2-B Rebstock Community, Sec. 2-19s-22e. Cg. 2,610 ft.
Martex Oil Co.'s No. 3-A Rebstock, Sec. 2-19s-22e. T.D. 2,665 ft.; 5-in. csg. 2,665 ft.; perf. csg. 2,630-62 ft.
Fred Shield's No. 1 Paul Callais, Sec. 2-19s-22e. 10¾-in. csg. 80 ft.; T.D. 2,658 ft.; 5½-in. csg. 2,676 ft.; abd.
Terouche Oil Co.'s No. 2 Cheramie, Sec. 12-19s-22e. Drk.
Texas Co.'s No. 7 Falgout Holding Co., Sec. 9-19s-22e. Drlg. sh. 6,182 ft.
Texas Co.'s No. 9 Falgout Holding Co., Sec. 9-19s-22e. Drlg. sd.&sh. 5,159 ft.
Texas Co.'s No. 10 Falgout Holding Corp., Sec. 9-19s-22e. Drlg. sh. 7,605 ft.
Texas Co.'s No. 3 La Terre Co., Sec. 1-20s-21e. Drlg. sh. 5,675 ft.
Texas Co.'s No. 4 La Terre Co., Sec. 2-20s-21e. Drlg. 1,510 ft.
Texas Co.'s No. 8 L.L.&E., Golden Meadow, Sec. 78-19s-21e. 10¾-in. csg. 1,406 ft.; T.D. 7,940 ft.; 7-in. csg. 7,905 ft.; I.P. 292 B.P.D.; 12/64-in. ck.

Grand Bay—Plaquemines Parish

Gulf Oil Corp.'s No. 6-A Grand Prairie Lv. Dist., Sec. 17-20s-10e. T.D. 10,458 ft.; P.B. 10,050 ft.; 5-in. csg. 10,073 ft.; perf. csg. 10,008-22 ft.; flwd. oil and S.W.; sqzd. perf.; reperf. csg.; tstg.
Gulf Oil Corp.'s No. 7-A Grand Prairie Lv. Dist., Sec. 5-20s-19e. Loc.
Gulf Oil Corp.'s No. 8-A Grand Prairie Dist., Sec. 5-20s-19e. Loc.
Gulf Oil Corp.'s No. 4 State, Sec. 20-19s-19e. Loc.
Texas Co.'s No. 1 State-Lookout Pass, Sec. 48-20s-18e. Loc.
Texas Co.'s No. 2 State-Lookout Pass, Sec. 31-19s-19e. Drlg. sh. 5,630 ft.

Grand Lake—Cameron Parish

Amerada Pet. Corp.'s No. 3 State, Sec. 12-13s-4w. R.U.
Superior Oil Co.'s No. 6 State, Twp. 13s-4w. T.D. 8,990 ft.; 7-in. csg. 8,991 ft.; perf. csg. 8,370-82 ft.; I.P. 357 B.P.D.; 12/64-in. ck.
Superior Oil Co.'s No. 7 State, Sec. 11-13s-4w. Loc.

Hackberry—Cameron Parish

Harrison & Abercrombie's No. 1 Doiron, Sec. 37-12s-10w. 10¾-in. csg. 1,441 ft. drlg. sh. 3,810 ft.
Stanolind O. & G. Co.'s No. 21-A Cameron Sch. Bd., Sec. 16-12s-10w. Drlg. sh. 2,020 ft.
Superior Oil Co.'s No. 2 Vincent, Sec. 30-12s-10w. Drlg. sd. 6,473 ft.
Texas Co.'s No. 28-B State. Drlg. sh. 6,330 ft.
Texas Co.'s No. 29-B State, Twp. 12s-9w. Cg. sd. 6,096 ft.
Union Sulphur Co.'s No. 2 Doiron, Sec. 37-12s-10w. T.D. 7,255 ft.; I.P. 574 B.P.D.; ⅞-in. ck.

Happytown—Iberville Parish

Shell Oil Co., Inc.'s No. 1 Schwing Lbr. & Shingle Co., Sec. 85-7s-8e. Loc.

Horseshoe Bayou—St. Mary Parish

Texas Co.'s No. 3 St. Mary Parish Ld. Co., Sec. 37-17s-9e. Drlg. sh. 10,790 ft.

Jeanerette—St. Mary Parish

Herton Oil Co.'s No. 6 Roane, Sec. 38-13s-9e. T.D. 10,789 ft.; 7⅝-in. csg. 10,260 ft.; stk. cutting tool; P.B. 10,170 ft.; perf. csg. 9,712-20 ft.; rec. S.W.; perf. csg. 9,694-9,702 ft.

Jefferson Island—Iberia Parish

Texas Co.'s No. 4 Jefferson Island Salt, Sec. 58-12s-5e. Drlg. sh. 7,974 ft.
Texas Co.'s No. 3 State, Twp. 12s-5e Drlg. sh. 2,164 ft.

Jennings—Acadia Parish

Glassell-Glassell's No. 8 McFarlain, Sec. 41-9s-2w. Drk.
Glassell-Glassell's No. 8 Trusher, Sec. 47-9s-2w. T.D. 9,165 ft.; sdtrkd.; drlg. sh. 8,118 ft.
Gulf Oil Corp.'s No. 42 Arnaudet, Sec. 47-9s-2w. Cg. 7,317 ft.
Shell Oil Co., Inc.'s No. 9 Community Drlg. sh. 6,434 ft.
Stanolind O. & G. Co.'s No. 116 Crowley O. & M. Co., Sec. 48-9s-2w. Drlg. sdy. sh. 7,915 ft.
Stricker-Pharis et al's No. 1 Gulf fee, Sec. 45-9s-2w. 16-in. csg. 60 ft.; drlg. L. 4,856 ft.

Lafitte—Jefferson Parish

Texas Co.'s No. 15 Lafitte, Sec. 20-17s-24e. Drlg. 6,730 ft.
Texas Co.'s No. 5 Marrero, Sec. 21-17s-24e. R.U.
Texas Co.'s No. 12 Rigolets Cooperative Fur Co., Sec. 28-17s-24e. Drlg. sh. 9,216 ft.

La Fourche Crossing—La Fourche Parish

Mikton Oil Co.'s No. 2 Martinez, Sec. 132-15s-17e. 11¾-in. csg. 2,687 ft.; T.D. 4,904 ft.; P.B. 4,700 ft.; sdtrk.

Lake Hermitage—Plaquemines Parish

Gulf Oil Corp.'s No. 11 La Fourche Basin Lv. Dist., Sec. 11-18s-25e. Drlg. sh. 7,196 ft.

Lake Mongoulois—St. Martin

Texas Co.'s No. 8 State, Sec. 10-10s-9e. Drk.

Lake Pelto—Terrebonne Parish

Texas Co.'s No. 10 State, Sec. 7-23s-18e. Drlg. sh. 5,112 ft.
Texas Co.'s No. 29 State, Sec. 18-23s-18e. T.D. 5,743 ft.; 7-in. csg. 5,300 ft.; perf. csg. 5,040-5,120 ft.
Texas Co.'s No. 30 Lake Pelto, Sec. 7-23s-18e. T.D. 5,271 ft., salt; sdtrkd.; T. salt 5,243 ft.

La Pice—St. James Parish

Shell Oil Co., Inc.'s No. 1 Lebermuth & Israel. T.D. 11,402 ft.; 5-in. csg. 11,402 ft.; flwd. 12 bbl. dist., 8 hrs.; 12/16-in. ck.; T.P. 4,750 lb.; C.P. 1,750 lb.

La Place—St. James Parish

Pan American Prod. Co.'s No. 1 Godchaux Sugars, Sec. 97-11s-7e. R.U.

New Iberia—Iberia Parish

Acadian Prod. Co.'s No. 4 E. T. Weeks, Sec. 51-12s-7e. Loc.
Wm. Helis' No. 7 Sabatier, Sec. 54-12s-7e. 7-in. csg. 2,205 ft.; T.D. 3,090 ft.; P.B. 2,995 ft.; 5½-in. csg. 3,010 ft.; perf. csg. 2,872-82 ft.; P.B. 2,905 ft.; I.P. 11 B.P.D.; pmpg.
Wm. Helis' No. 7 J. E. Schwing, Sec. 56-12s-7e. T.D. 8,850 ft.; P.B. 7,840 ft.; T.D. 8,850 ft.; P.B. 8,025 ft.; went back into old hole; P.B. and sdtrk.; T.D. 8,240 ft.; 7-in. csg. 8,200 ft.; well went dead; swbg.
Wm. Helis' No. 9 Schwing, Sec. 56-12s-7e. T.D. 855 ft.; 7-in. csg. 825 ft.; W. O.S.R.
Texas Co.'s No. 2 Bryant, Sec. 25-12s-7e. R.U.
Texas Co.'s No. 14 Duke, Sec. 26-12s-7e. Drlg. sh. 5,912 ft.
Texas Co.'s No. 15 Duke, Sec. 26-12s-7e. Drk.
Texas Co.'s No. 2 Hebert, Sec. 25-12s-7e. Loc.
Texas Co.'s No. 1 H. Perry Walet, Sec. 2-12s-7e. Drlg. sd.&sh. 3,950 ft.
Texas Co.'s No. 2 Smith, Sec. 71-12s-7e. Drlg. sh. 706 ft.

North Crowley—Acadia Parish

Humble O. & R. Co.'s No. 5 Ohlentorst, Sec. 34-8s-1e. T.D. 9,080 ft.; rec. S.W. 9,066-71 ft.; P.B. 9,074 ft.; perf. csg. 9,015-20 ft.; tstd. gas and dist.; P.B. 8,520 ft.; perf. csg. 8,482-87 ft.; I.F. 735 B.P.D.; ¼-in. ck.
Humble O. & R. Co.'s No. 3 Stokes, Sec. 33-8s-1e. Drlg. sdy. sh. 5,825 ft.

Paradis—St. Charles Parish

Texas Co.'s No. 3 L.L.&E. Paradis, Sec. 8-14s-20e. 10¾-in. csg. 1,448 ft.; drlg. sh. 10,170 ft.

Plumb Bob—St. Martin Parish

Texas Co.'s No. 13 St. Martin Ld. Co., Sec. 21-8s-7e. Drk.

Port Barre—St. Landry Parish

Gulf Oil Corp.'s No. 17 Wilson-Broach, Sec. 4-6s-5e. T.D. 4,861 ft.; P.B. 2,061 ft.; sdtrkd.; T.D. 5,704 ft., salt.
McDannald Oil Co.'s No. 2 Futral, Sec. 20-6s-5e. Drlg. sh. 3,104 ft.
Y. D. Spill's No. 1 Gaudet, Sec. 4-6s-5e. S.D. 4,700 ft.
Texas Co.'s No. 27 Botney Bay, Sec. 4-6s-5e. Drlg. sd. 3,081 ft.
Westgate-Greenland Oil Co.'s No. 1 Jeansenne, Sec. 20-6s-5e. T.D. 5,286 ft.; 7-in. csg. 5,286 ft.; perf. csg.; S.D. 5,288 ft.

Potash—Plaquemines Parish

Humble O. & R. Co.'s No. 41 Orleans, Sec. 14-18s-15e. T.D. 4,480 ft.; P.B.; sdtrkd.; T.D. 4,453 ft.
Humble O. & R. Co.'s No. 42 Orleans Lv. Dist., Sec. 14-18s-15e. Loc.

Quarantine Bay—Plaquemines Parish

Gulf Oil Corp.'s No. 4-A Orleans Lv. Bd., Sec. 7-19s-17e. T.D. 8,255½ ft.; 7-in. csg. 8,238 ft.
Gulf Oil Corp.'s No. 9 State QQ, Sec. 18-19s-17e. Drlg. 8,150 ft.

Roanoke—Jeff Davis Parish

Humble O. & R. Co.'s No. 7 Kratzer, Sec. 11-9s-4w. Drlg. sh. 7,334 ft.

Sorrento—Ascension Parish

Sorrento Synd.'s No. 2 L. L. Bernard Sec. 22-10s-4e. R.U.

South Jennings—Jeff Davis Parish

Stanolind O. & G. Co.'s No. 1 Clare E. Landry and A. A. Hebert. R.U.
Stanolind O. & G. Co.'s No. 1 Morgan, Sec. 15-10s-3w. Loc.
Stanolind O. & G. Co.'s No. 1 L. Remage, Sec. 9-10s-3w. Loc.

Starks—Calcasieu Parish

W. T. Burton's No. 1 Industrial Lbr. Co., Sec. 29-9s-1w. Cg. 7,362 ft.

Venice—Plaquemines Parish

Tide Water Asso. Oil Co.'s No. 11 Manhattan Ld. Co., Sec. 35-21s-30e. T.D. 7,822 ft.; 7-in. csg. 7,805 ft.; perf. csg. 7,778-94 ft.; flwd. oil and S.W.

Vermilion Bay—Iberia Parish

Texas Co.'s No. 4-B Vermilion Bay, Twp. 16s-5e. Drlg. 5,170 ft.

Villa Platte—Evangeline Parish

Continental Oil Co.'s No. 2 Fontenot Deshotels, Sec. 44-3s-2e. T.D. 10,310 ft.; T. Wlx. 10,010 ft.; run 6-in. csg.; tstg. perf. csg. 8,950-65 ft.; I.P. 41 B.P.D.; ⅞-in. ck.
Continental Oil Co.'s No. 2 B. G. Fontenot, Sec. 41-4s-2e. Drk.
Continental Oil Co.'s No. 5 Fontenot, Sec. 46-3s-2e. Drlg. sh. 8,377 ft.
Continental Oil Co.'s No. 6 Opelousas, Sec. 47-3s-2e. Drlg. sh. 8,875 ft.
Continental Oil Co.'s No. 3 Adam Tate, Sec. 40-4s-2e. Drlg. sh. 7,136 ft.
Continental Oil Co.'s No. 2 W. L. Tate, Sec. 48-3s-2e. T.D. 10,582 ft.; perf. csg. 9,072-82 ft.; I.P. 272 B.P.D.; ⅞-in. ck.
Danciger O. & R. Co.'s No. 1 J. E. Vidrine, Sec. 1-4s-2e. Drlg. sh. 9,598 ft.

West Gueydan—Vermilion Parish

Magnolia Pet. Co.'s No. 4 Ferguson, Sec. 5-12s-2w. T.D. 7,161 ft.; 7-in. csg. 7,161 ft.; perf. csg. 7,148-58 ft.; flwd. gas and dist.

West Lake Verret—St. Mary Parish

Shell Oil Co., Inc.'s No. 4 Jeanerette T.D. 9,844 ft.; rmg.

White Castle—Iberville Parish

Shell Oil Co., Inc.'s No. 1 Forest Home. Loc.

Woodlawn—Jeff Davis Parish

Union Sulphur Co.'s No. 4 Miller, Sec. 7-9s-5w. Cg. sh. 8,883 ft.
Union Sulphur Co.'s No. 2 Norton, Sec. 12-9s-6w. R.U.
Union Sulphur Co.'s No. 1 Trimble, Sec. 7-9s-5w. Drlg. sh. 5,160 ft.
Woodlawn Oil Corp.'s No. 1 Hebert, Sec. 1-9s-6w. T.D. 9,543 ft.; 7-in. csg. 9,170 ft.; perf. csg. 9,189-93 ft.; flwd. S.W. and dist.; well flwd. 100% S.W.; plld. tbg.; set cmt. retainer at 9,175 ft.; sqzd. perf.; W.O.C.

S. LOUISIANA WILDCATS

Allen Parish

Housh & Thompson's No. 1 Ind. Lbr. Co., Sec. 1-4s-5w. 10¾-in. csg. 1,600 ft.; T. Wlx. 10,285 ft.; T.D. 10,305 ft.; abd.

Beauregard Parish

Atlantic Ref. Co.'s No. 1 Lutcher Moore Lbr. Co., Sec. 13-5s-12w. Drlg. sdy. sh. 3,094 ft.
Atlantic Ref. Co.'s No. 1 Lutcher Moore, Sec. 22-3s-11w. Loc.
Atlantic Ref. Co. No. 1 Rice Ld. & Lbr. Co., Sec. 22-3s-11w. Loc.
Atlantic Ref. Co.'s No. 1 D. A. Whitmer, Sec. 26-3s-11w. R.U.

Calcasieu Parish

E. W. K. Andreau et al's No. 1 W. W. Blackman, Sec. 20-9s-6w. R.U.
C. L. Arnette's No. 1 Arthur Welch, Sec. 19-10s-12w. 10¾-in. csg. 130 ft.; T.D. 395 ft.; S.D.

Cameron Parish

Phillips Pet. Co.'s No. 1 Miami Corp., Sec. 11-14s-6w. Drlg. sh. 9,863 ft.
Superior Oil Co.'s No. 1 State, Calcasieu Lake, Twp. 14s-9w. Loc.

Iberia Parish

Plymouth Oil Co. et al's No. 1 Lynch McHugh, Sec. 13-12s-10e. 10¾-in. csg. 2,519 ft.; cg. sd. 8,907 ft.

Jeff Davis Parish

Continental Oil Co.'s No. 1 Niblett, Sec. 1-11s-5w. 13⅜-in. csg. 2,085 ft.; drlg. sh. 8,399 ft.
H. M. Naylor's No. 1 Acadia Dev. Co., Sec. 12-10s-2w. Loc.

Jefferson Parish

Vendome Pet. Co.'s No. 1 Coulon, Sec. 15-15s-23e. Dredge canal.

La Fourche Parish

Gulf Oil Corp.'s No. 1-B Bowie Lbr. Co., Sec. 69-15s-19e. Bldg. rd.
Humble O. & R. Co.'s No. 1 Caldwell Sugars, Inc., Sec. 115-14s-15e. Bldg. rd.
Tide Water Asso. Oil Co. No. 1 Delta Farms, Inc., Sec. 6-17s-23e. T.D. 11,850 ft.; P.B. T.D. 11,810 ft.; perf. csg. 11,780-11,800 ft.; rec. 30 ft. of dist., 400 ft. drlg. mud; P.B. 11,325 ft.; perf. csg. 11,290-11,305 ft.; rec. S.W.; perf. csg. 11,270-80 ft.; rec. 85 stands oil, and 5% S.W.

Orleans Parish

W. T. Burton's No. 1 L.&N.R.R., Sec. 18-11s-15e. T.D. 10,394 ft.; 5½-in. csg. 10,274 ft.; S.D.
W. T. Burton's No. 2 State, Lake Pontchartrain, Twp. 10s-13e. Drlg. sh. 6,000 ft.

Plaquemines Parish

California Co.'s No. 1 Delta Minerals, Sec. 2-15s-24e. M.I.M.
Gulf Oil Corp.'s No. 1-D Buras Lv. Dist., Sec. 6-23s-31e. 9⅝-in. csg. 8,204 ft.; drlg. sh. 10,103 ft.

Rapides Parish

S. W. Richardson's No. 1 Hillyer-Edwards, Sec. 21-1s-3w. Drlg. 168 ft.
Smith & Aarnes' No. 1 Eota Realty Co., Sec. 12-4n-3e. Drk.

St. Bernard Parish

Gulf Ref. Co.'s No. 4 State-R.R. (Lake Borgne), Twp. 12s-15e. 9⅝-in. csg. 8,161 ft.; T.D. 10,632 ft.; P.B. 9,700 ft.; rmd. to 9,658 ft.; lost core bbl.; P.B. sdtrkd. 8,912 ft.; T.D. 10,528 ft.; 7-in. csg. 10,494 ft.; P.B. 10,412 ft.; make D.S.T.

St. Charles Parish

R. H. Parker et al's No. 1 C. L. Thompson, Sec. 87-13s-20e. Loc.

St. Landry Parish

Pure Oil Co. et al's No. 1 E. M. Boagni, Sec. 41-6s-4e. 10¾-in. csg. 1,276 ft.; drlg. sd. 7,068 ft.

St. Martin Parish

Wm. Helis' No. 1 Rycade Oil Co., Sec. 33-9s-7e. T.D. 8,899 ft.; sdtrkd. 7,393 ft.; drlg. sh. 7,900 ft.

St. Mary Parish

Perry S. Cooney No. 1 A. W. Allain, Sec. 46-13s-9e. S.D. 2,600 ft.
Wm. Helis' No. 1 J. J. St. Martin, Sec. 32-9s-7e. Drlg. sh. 841 ft.
Texas Co.'s No. 1 State, Cote Blanche, Twp. 16s-7e. Drlg. sh. 1,984 ft.

Terrebonne Parish

Barnsdall Oil Co.'s No. 1 Nelson, Sec. 2-21s-11e. 10¾-in. csg. 2,767 ft.; drlg. sh. 10,504 ft.
Texas Co.'s No. 4 State, Coon Point, in Lake Caillou, Twp. 23s-14e. Loc.

Vermilion Parish

La. Ld. & Explin Co.'s No. 1 Walter White hrs., Sec. 17-15s-1e. R.U.
Texas Co.'s No. 1 Vermilion Par. Sch. Bd., Sec. 16-13s-4e. T.D. 9,923 ft.; 7⅝ in. csg. 9,918 ft.; T.D. 10,595 ft.; P.B. 10,250 ft.; sdtrkd. 10,300 ft.; drlg. sh. 10,385 ft.

ARKANSAS

Columbia County

Hunt Oil Co.'s No. 2 McWilliams, NE NE Sec. 16-18-19. 9⅝-in. csg. 2,109 ft.; S.D.; frozen wtr. line.
J. K. Mahoney's No. 2 E. Riley, C NE NE Sec. 14-18-19. Drlg. 4,220 ft.
Normandie Oil Co.'s No. 1 C. E. Crumpler, 495 ft. N, 660 ft. E, SW cor. SE Sec. 18-17-19. Drlg. rd.&gr. sh. 5,868 ft.
Placid Oil Co.'s No. 2 J. W. Boothe unit, C NW SW Sec. 20-17-19. R.U.
Southwood Oil Co.'s No. 1 Poindexter-

Couch unit, 559 ft. S, 660 ft. W, NE cor. SE SE Sec. 23-17-20. Drlg. rd.& gr. sh. 4,740 ft.
Oilphant Oil Co.'s No. 1 Rowe, 460 ft. N, 660 ft. E, SW cor. Sec. 16-17-20. R.U.
Shell Oil Co., Inc.'s No. 2 D. H. Lewis, C SE NE Sec. 19-17-19. Cg. 7,451 ft.
Southwood's No. 1-A Poindexter, 100 ft. N, C SE SE Sec. 23-17-20. Drlg. rd.& gr. sh. 4,447 ft.
Standard Oil Co. of La.'s No. 2 Booth, 660 ft. E, 560 ft. S, NW cor. SW SE Sec. 24-17-20. Set 6-in. csg. 7,517 ft.; washed well; made dry gas; C.P. 2,425 lb.; T.P. 2,425 lb.; tstg.; T.D. 7,585 ft.
Standard Oil Co. of La.'s No. 1-B Longino, C NW SE Sec. 19-17-19. Drlg. sh. 5,075 ft.
Tide Water-Seaboard Oil Co.'s No. 1 W. Mack, C SW NE Sec. 16-18-19. S.D. 1,235 ft.; frozen wtr. line.

Craighead County

Tennark, Inc., No. 1 R. M. Martin, SE cor. NE NE Sec. 35-14-3e. Drlg. hd. gr. sh. 4,910 ft.

Faulkner County

Cato Oil Co.'s No. 1 Harrell, 330 ft. SE cor. SE SW Sec. 35-4-12. U.R. 7-in. csg. 2,538 ft.

Howard County

Wm. James, tr.'s No. 3 I. M. Rooke, 50 ft. SW of No. 1, Sec. 2-8s-27w. S.D. 397 ft. for D.S.
Joe Rogers' No. 1 Dierks Lbr. Co., C SW SW Sec. 7-8s-28w. R.U.

Lafayette County

East Texas Ref. Co. et al's No. 1-C C. Warren et al, C NE SE NW Sec. 24-16-24. Tstd. S.W. 3,504-24 ft.; P.B. 2,275 ft.; drld. to 2,345 ft.; 5½-in. csg. 2,323 ft.; T.D. 2,345 ft.; arng. swb.

Lonoke County

Lunnon Howell & Ford's No. 1 City of Cabot, C NE Lot 1, Blk. 6, Sec. 18-4n-9w. Drlg. limey sh. 872 ft.
J. F. Russell's No. 1 J. T. Gunter, 440 ft. N, 577 ft. W, SE cor. Sec. 17-5n-10w. S.D.; frozen wtr. line; T.D. 2,114 ft.

Nevada County

Berry Asphalt Co.'s No. 5 Fincher, 220 ft. NW cor. NE SE Sec. 10-14-20. Set 10-in. csg. 20 ft.; T. sd. 1,245 ft.; set 7-in. csg. 1,245 ft.; T.D. 1,246 ft.; W.O.S.R.
Berry Asphalt Co.'s No. 9 Groves Ld. & Tmbr. Co., 330 ft. S and W, C Sec. 10-14-20. Set 10-in. csg. 28 ft.; S.D. 30 ft.
Texas Canadian Oil Corp.'s No. 1 J. M. Stocks, 300 ft. S, 380 ft. W, NE cor. SW SE Sec. 9-15-22. Wshd. to btm. and S.D. 1,246 ft.

Sevier County

R. A. McArthur's No. 1 Bell est., 20 ft. SE cor. SE SW Sec. 29-9s-32w. Set 12½-in. csg. 100 ft.; S.D. 575 ft.

Union County—Schuler

Ben Laney's No. 1 Cutrer, 150 ft. N, 660 ft. W, SE cor. NW SW Sec. 21-17-14. Set 10-in. csg. 114 ft.; W.O.C.
Lion Oil Co.'s No. 1 Land, 330 ft. NE cor. SW SE Sec. 13-18-18. T. Jones sd. 7,552 ft.; set 7-in. csg. 7,644 ft.; T.D. 7,645 ft.; perf. 7,560-80 ft.; swbd. and flwd. 45 bbl. in 10 hrs., 15% S.W.; sqzd.; W.O.C.
Lion Oil Ref. Co.'s No. 7-B Morgan, 330 ft. NW cor. W½ SE Sec. 18-18-17. T. Jones sd. 7,546 ft.; T.D. 7,730 ft.; set 7-in. csg. 7,730 ft.; reperf. 5,571-75 ft., 5,594-96 ft., and 5,831-33 ft.; swbd. 23 bbl. S.W. and oil in 9 hrs.; S.D. 5,871 ft.
Phillips Pet. Co.'s No. 5 Brian, 330 ft. SE cor. NW SE Sec. 13-18-18. Set 9⅝-in. csg. 2,249 ft.; drlg. 3,330 ft.
Phillips Pet. Co.'s No. 1 Goodwin, 330 ft. N, 660 ft. W, SE cor. Lot 1, Sec. 19-18-17. Set 13⅜-in. csg. 147 ft.; T. Jones sd. 7,582 ft.; 5½-in. csg. 7,683 ft.; W.O.C.
Texas Canadian Oil Corp.'s No. 1 J. M. Stocks, 300 ft. S, 380 ft. W, NE cor. SW SE Sec. 9-15-22. Washed to bttm. and S.D. 1,246 ft.

Union County—Other

Barnsdall Oil Co.'s No. 1 Cameron, C SW SW Sec. 36-19-17. Set 13⅜-in. csg. 239 ft. (cor.); set 10¾-in. csg. 2,430 ft.; cd. 4,149-66 ft.; rec. 16 ft. 8 in. hd. sd., sl. odor gas; B. chalk 2,593 ft.; T. Tko. 3,061 ft.; ran Schlmb. to 8,000 ft.; drlg. Cttn. Vlly. form. 8,440 ft.
Bob Branch's No. 1 J. M. Davis, 130 ft. SW cor. SE NW Sec. 28-16-14. T.D. 2,760 ft.; lost part of core bbl.; prep. whpstck. 2,760 ft.
Delta Drlg. Co.'s No. 1 C. T. Grace, C SE SE Sec. 31-12-14. Set 10¾-in. csg. 815 ft.; T. Sur. L. 6,701 ft.; T. por. 6,708 ft.; S.W. 6,712 ft.; tstd. mud, S.W.&S.O. 6,701-27 ft.; T.D. 6,819 ft.; arng. set 6-in. csg. approx. 4,800 ft.
Kinard, Curtis et al's No. 1 J. A. Kelly, 330 ft. SW cor. SE SW Sec. 9-17-14. R.U.
Ouachita Union Oil Corp.'s No. 1 Ramsey est., 330 ft. NE cor., SE NW Sec. 26-17-14. Set 10-in. csg. 107 ft.; set whpstk. 3,042 ft.; S.D., rd. sh. 3,490 ft.

TEXAS

Week Ended January 27

GULF COAST FIELDS

Anchor—Brazoria County

Humble O. & R. Co.'s No. 1 R. H. Carr, Blk. 62. Drlg. sh. 6,174 ft.
Humble O. & R. Co.'s No. 1 Crockett, J. de Jesus Valderas Sur. 13⅜-in. csg. 1,033 ft.
Humble O. & R. Co.'s No. 1 Galznik & Taylor, J. de Jesus Valderas Sur. 9⅝-in. csg. 6,953 ft.; drlg. sh.&L. 9,302 ft.
Glenn McCarthy's No. 1 Gelaznik, Valderas Sur. Drlg. sh. 4,530 ft.
Glenn McCarthy's No. 1 Neidringhaus, J. Bradley Sur. 13⅜-in. csg. 926 ft.; drlg. sh. 5,612 ft.
Glenn McCarthy's No. 1 Ida M. Salmon and John Muma, Geo. Robinson Sur. 9⅝-in. csg. 6,860 ft.; T. Frio 8,820 ft.; T.D. 10,756 ft.; perf. csg. 9,820-24 ft.; flwg. 5 bbl. dist. per hr.; 21/64-in. bttm.-hole ck.; ¼-in. ck. on top; flwd. gas and dist.; killed well; perf. csg. 9,400-06 ft.

Old Ocean—Brazoria County

Harrison & Abercrombie's No. 8 Armstrong, Polly & Chance Sur. Drlg. sh. &sd. 5,860 ft.
Harrison & Abercrombie's No. 7 Bernard River Ld. Dev. Co., C. Breen Sur. Drlg. sh. 9,330 ft.
Harrison-Abercrombie's No. 3 Larsen, C. Breen Sur. Drlg. sh. 8,212 ft.
Stanolind O. & G. Co.'s No. 1 Giles, C. Breen Sur. 9⅝-in. csg. 7,047 ft.; T.D. 10,600 ft.; perf. csg. 10,077-10,117 ft.; tstg.
Sun Oil Co.'s No. 4 McCampbell, C. Breen Sur. 13⅜-in. csg. 1,505 ft.; drlg. sh.& L. 6,036 ft.

Seabreeze—Chambers County

Sun Oil Co.'s No. 1 Samuelson & Whitney, T.&N.O. Sur. 131. Drlg. sh. 5,626 ft.

Garwood—Colorado County

Davis & Co., Inc., No. 1 J. R. McLane, I.&G.N. Sur. 41. T.D. 10,536 ft.; set 814 ft. of 5-in. lnr. on bttm.; perf. csg. 10,330-62 ft., 10,394-10,410 ft.; would not flow; reperf. csg. 9,960-80 ft.

Big Creek—Fort Bend County

Merrimac Oil Corp.'s No. 1 George, B. Wickson Sur. (SW. Flank). Spd. and S.D.

Rosenberg—Fort Bend County

Humble O. & R. Co.'s No. 1 Skripka, C. N. Simpson Sur. Drlg. sh. 5,190 ft.

Caplen—Galveston County

Sun Oil Co.'s No. 2 Zinn & Forman, S. F. Hughes Sur. 9⅝-in. csg. 1,988 ft. T.D. 7,550 ft.; 5⅛-in. csg. on bttm.; perf. csg. 7,480-88 ft.; flwd. dry gas.

League City—Galveston County

Phillips Pet. Co. No. 1 Dr. O. Patton (1 mi. E of production). Perf. csg. 9,177-97 ft.; flwd. S.W.; sqzd. perf.; C.O.
Phillips Pet. Co.'s No. 2 J. S. Rice est., J. M. Perry & Austin Sur. T.D. 11,411 ft.; fsg.
Phillips Pet. Co.'s No. 3 Stewart Title Guaranty Co., S. F. Austin Sur. R.U.
Phillips Pet. Co.'s No. 4 Stewart Title Guaranty Co., S. F. Austin Sur. 10¾-in. csg. 3,520 ft.; 7⅝-in. csg. 9,510 ft.; T.D. 11,270 ft.; well blew out; running wild, making gas and dist.; well brought under control; flwg. gas, dist., and S.W.

Clear Lake—Harris County

Humble O. & R. Co.'s No. 30-C Humble-West, Wm. Dobie Sur. Drlg. sh. 4,490 ft.
Humble O. & R. Co.'s No. 32-C Humble-West. Drlg. 1,520 ft.

Bammel—Harris County

H. M. Harrell's No. 1 Graves, C. Walters Sur. Spd.

Friendswood—Harris County

Humble O. & R. Co.'s No. 39 Beamer, T. Choate Sur. Drlg. sh. 2,413 ft.
Humble O. & R. Co.'s No. 15 Keisling, T. Choate Sur. Drlg. sh. 2,637 ft.

Lovells Lake—Jefferson County

Humble O. & R. Co.'s No. 4-B Steinhagen, Wm. Carr Sur. R.U.
Humble O. & R. Co.'s No. 4 Todd, Wm. Carr Sur. Drlg. sh. 2,606 ft.
Humble O. & R. Co.'s No. 3-B Steinhagen, A. O. Donnell Sur. 9⅝-in. csg. 1,153 ft.; drlg. sh. 7,646 ft.

Esperson—Liberty County

General Crude Oil Co.'s No. 9 Davis, D. Kokernot Sur. T.D. 8,314 ft.; well blew out, caught fire, cratered.
General Crude Oil Co.'s No. 7-B Esperson, A. McNeil Sur. T.D. 7,860 ft.; P.B and sdtrkd.; T.D. 7,660 ft.; sdtrkd.; drlg. sh. 7,346 ft.

Hull—Liberty County

Gulf Oil Corp.'s No. 115 Phoenix Dev. Co., J. Devore Lge. (SE flank deep test). 9⅝-in. csg. 5,904 ft.; T. salt 8,113 ft.; T.D. 8,164 ft., salt.

Martha—Liberty County

Stanolind O. & G. Co.'s No. 2 Flowers, I.&G.N.R.R. Sur. Drk.
Stanolind O. & G. Co.'s No. 1 J. D. Ross, I.&G.N. Sur. 7. Drlg. sh. 2,241 ft.

Segno—Polk County

J. K. Dorrance's No. 5-A Wing, I.&G.N. Sur. 15. Drlg. sh. 2,310 ft.
Gulf Oil Corp.'s No. 4 Quinn, A. Morales Sur. R.U.
Gulf Oil Corp.'s No. 24 Wing, I.&G.N. Sur. 14. T.D. 8,149 ft.; W.O.C.
Gulf Oil Corp.'s No. 28 Wing, I.&G.N. Sur. 15. Drlg. 2,630 ft.
Humble O. & R. Co.'s No. 2-A Hughes, I.&G.N. Sur. 13. R.U.

Spurger—Tyler County

Republic Prod. Co.'s No. 31 fee, N. Hurd Sur. T.D. 7,710 ft.; tstg.
Republic Prod. Co.'s No. 32 fee, N. Hurd Sur. Spd.

Hilje—Wharton County

Texas Co.'s No. 2 Peters, E.T.R.R. Sur., Sec. 101. Loc.

GULF COAST WILDCATS

Brazoria County

Fabriquze et al's No. 1 Freeport Sulphur, Stephen F. Austin Sur. (Bryan Mound). M.I.M.
Hamman Explin. Co.'s No. 1-B Darrington State Prison Farm, F. Bingham Sur. Loc.
D. M. Hill's No. 1 Max Bader, Wm. Smeathers Lge. Loc.
Glenn McCarthy's No. 1 E. W. K. Andrau, H.T.&B. Sur. 5. 10¾-in. csg. 3,512 ft.; T.D. 10,591 ft.; W.O.C.
Glenn McCarthy's No. 2 Houston Farm Dev. Co., J. Perry & E. Austin Sur. 7. 10¾-in. csg. 3,492 ft.; T.D. 10,500 ft.; P.B. 10,410 ft.; W.O.
Titanic Oil Co.'s No. 2 S. E. Allen, J. G. and W. McNeil Sur. R.U.

Chambers County

Geo. Anderson et al's No. 1 Veruna Lawrence, W. D. Smith Sur. T.D. 7,215 ft., S.W. sd.; taking sidewall cores.

Colorado County

Cockburn Oil Corp. No. 1 R. W. Ferrs, H. Chrisman Sur. Loc.

Fort Bend County

Fred Browning's No. 1 Kroescher, W. Bartlett Sur. 10¾-in. csg. 1,128 ft.; T. D. 8,011 ft.; 7-in. csg. 8,195 ft.; sd. 8,126-29 ft.; perf. csg. 8,181-85 ft.; flwg. flwd. gas and S.W.; reperf. csg. 8,160-67 ft.
H. C. Cockburn's No. 1 G. W. Burkett, Bundieck Sur. Loc.
Magnolia Pet. Co.'s No. 1 G. H. Huntington, Henry Scott Sur. T. Cckfld. 7,556-60 ft.; T.D. 8,698 ft.; perf. lnr. 8,662-72 ft.; rec. S.W.; perf. csg. 8,246-50 ft.; flwg. 2 bbl. dist. per hr.; 9/64-in. ck.; press. dropped; reperf. csg. 8,248-54 ft.; flwg. dist.; flwd. 17 bbl. dist.; ⅛-in. ck.; T.P. 175 lb.; C.P. 575 lb.; reperf. csg. 8,179-84 ft.; I.P. 22 bbl. dist. per day; ¼-in. ck.
Ray Ranger's No. 1 Sugarland Industries, John Foster 2½ Lge. T.D. 8,010 ft.; abd.
Temple Hargrove et al's No. 1 Sugar Ld. Ind., A. Alcorn Sur. Spd.

Galveston County

Continental Oil Co.'s No. 1 Lobit-Cherardi, Perry & Austin Sur. T.D. 9,839 ft.; prep. to sdtrk.
Standard Oil Co.'s No. 1 State, Sec. 234. 10¾-in. csg. 2,001 ft.; drlg. plug.
Sun Oil Co.'s No. 1 State, Sec. 178. Dredge canal; driving piling.

Harris County

T. A. Carlton Oil Co.'s No. 1 J. J. Sweeney, G. W. Eaton Sur. Spd.
Cities Service Oil Co.'s No. 1 Perry V. Cook, Wm. Slayer Sur., Sec. 60. Drlg. sh. 2,100 ft.
Gulf Oil Corp.'s No. 1 H. H. Roberts, A Roberts Sur. T.D. 7,583 ft., S.D.
N. W. Hunter et al's No. 1 Green's Bayou Homesites, S. C. Hiroms Sur. 10¾-in. csg. 810 ft.; drlg. sh. 3,750 ft.
R. A. Irwin et al's No. 1 C. H. Grisbee, John Picture Sur. T.D. 7,018 ft.; abd.
Martin Thompson's No. 1 Kate Fuchs, J. Doswell Sur. 10¾-in. csg. 802 ft.

Jackson County

H. J. Porter et al's No. 1 Jackson Co. State Bnk., E. Durbin Sur. T.D. 2,799 ft.; abd.

Jefferson County

Fidelity O. & Roy Co.'s No. 1 J. J. Craigen, J. E. Broussard Sur. Bldg. rd.
Merrimac Oil Corp.'s No. 1 State, Tr. 72, 50 ft. due E of Harwell's abd. hole W.O.; R.U.
Rowan Drlg. Co.'s No. 1 Toney Tortorias, H.&T.C. Sur. T.D. 8,015 ft.; abd.

Liberty County

Hebert & Smith's No. 1 W. E. Boyt, H. &T.C.R.R. Sur. Cg. 6,780 ft.

Matagorda County

Gulf Stream Oil Co.'s No. 1 G. W. Ziprian, Lake Lessassier Sur. S.D. 4,060 ft.
Providence Oil Corp.'s No. 1 E. Strawbridge, J. W. E. Wallace Sur. Drk.
Texas Gulf Prod. Co.'s No. 1 Gulf Tex. Oil Co., Ira Ingram Sur. Drk.
Van M. Vincent's No. 1 J. F. McNabb Est., E. R. Wightman Lge. Loc.

Montgomery County

H. C. Cockburn et al's No. 1 Bender, Montgomery Co. Sch. Ld.and De Crow Sur. Loc.
Continental Oil Co.'s No. 1 Bender est., Montgomery Co. Sch. Ld. Sur. 13⅜-in. csg. 1,243 ft.
David B. MacDaniel's No. 1 Hattie O. Baldwin, Walker Co. Sch. Ld. Sur. 10¾-in. csg. 1,230 ft.; T.D. 8,900 ft., est.; D.S. stk.
Dick Schwab et al's No. 1 Foster est., De La Garza Sur. Loc.
Sturm & Womack's No. 2 Foster est, Abraham Pevehouse Sur. T.D. 7,265 ft.
West Conroe Oil Corp.'s No. 1 R. L. Caifee, H. N. McDillon Sur. T.D. 4,764 ft.; tstd. S.W. 4,516-78 ft.

San Jacinto County

Harrison & Abercrombie's No. 1 Lockin, Wm. Hays Sur. Drlg. sh. 8,321 ft.

Waller County

Cities Service Oil Co.'s No. 1 P. V. Cook, H.&T.C. Sur. 60. Spd.
Hunter & Mayos et al's No. 1 Humble fee, Wm. Hooper Sur. Drlg. sh. 4,370 ft.

Washington County

Mount Selman Oil Co. No. 1 Fritz Fuelberg, W. Lightfoot Sur. S.D. 4,510 ft.

Wharton County

H. C. Cockburn et al's No. 1 F. T. Reitz, E.T.R.R. Sur., Sec. 59. Drk.
O. C. Garvey et al's No. 1 Stockton, S. P. Middle Sur. Loc.
Sam Harrison's No. 1 Neil Carlson, Morris & Cummins Sur. Loc.
J. F. Hutchins' No. 2 Borden, E. M. Cox Sur. A-14. T.D. 5,500 ft.; 5½-in. csg. 4,840 ft.; perf. csg. 4,758-71 ft.; flwd. gas and dist.; no ga.
Dr. T. M. Neal No. 1 fee, Elisha Flack 4,840 ft.

S. W. TEXAS WILDCATS

Aransas County

Continental Oil Co.'s No. 1 St. Charles Co., R. D. Blassman Sur. 18⅝-in. csg. 290 ft.; drlg. sh. 8,968 ft.

Atascosa County

John Durst's No. 1 Wright, Edw. Morris Sur. Loc.
Red Bank Oil Co. et al's No. 1 J. P. Pratt, Francisco de La Garza Sur. 46. T.D. 2,386 ft.; 7-in. csg. 2,347 ft.; swb. wash wtr., showing of oil; S.D.

Bastrop County

C. R. Franklin's No. 1 Oscar McDonald, Martha Barker Sur. Drlg. 1,306 ft.

Bee County

Bunte Bros., Inc.'s No. 1 J. T. Earnest, Bee Co. Sch. Ld. Sur. Drk.
Mills Bennett Prod. Co. and Anderson-Prichard Oil Co.'s No. 2 Robinson, J. M. Uranga Sur. (Wlx. test, West Tuleta field). Drlg. sh. 2,000 ft.
Union Prod. Co.'s No. 56 Ray, T. Hanson Sur. (Pettus field); Wlx. test. Spd.

Bell County

G. P. Shelton et al's No. 1 Nelson, Michael Griffin Sur. S.D. 1,206 ft.

Bexar County

L. Beauchamp et al's No. 1 J. J. Brown R. F. Shield Sur. 19. Loc.
Heller Pet. Co.'s No. 1 Wildmann, Juan Sanchez Sur. 34. S.D. 448 ft.
Joe Noake's No. 1 San Antonio Sub. Irrg. Farm, W. Miller Sur. 180. S.D. 250 ft.
Philtop O. & G. Co.'s No. 1-A Cassin, Fernando Rodriquez Sur. S.D. 2,124 ft.
J. A. Tarver's No. 1 Florence Lam, Manuel de Luna Sur. 3. 6⅝-in. csg. 1,205 ft.; T.D. 1,692 ft.; cd. bkn. sh. 1,638-92 ft.; S.S.O.; bailed est. 10 bbl. oil P.D. before sanding up; S.D.
J. A. Tarver et al's No. 1 Joseph Leonard, Manuel de Luna Sur. 3. R.U.

Blanco County

E. L. Nixon's No. 3 Crist, John McClenchen Sur. 94. Drlg. sh. 1,230 ft.

Burleson County

H Y. Barnett's No. 1 Giesenschlag, J. W. Hollingsworth Sur. Drlg. 710 ft.

Caldwell County

Kean & Williamson's No. 1 E. E. Rector, J. Roberts Sur. Drlg. 730 ft.

Calhoun County

Coronado Corp. No. 1 K. Welder, Hidalgo Sur., 3 mi. SE Seadrift. "Tight well"; reported to be tstg.; 5½-in. csg. 9,750 ft.; perf. csg. 9,500-9,600-9,700 ft.; rec. S.W.; sqzd. perf.

De Witt County

Atlantic Ref. Co.'s No. 1 Pearl Conwell, Chas. Lockhart Sur. T.D. 5,290 ft.; rmg.
I. K. Howeth et al's No. 1 Keepers, Antonio Lazo Sur. R.U.

Duval County

Alaska-Tex Oil Corp.'s No. 1 W. P. Peters, B.S.&F. Sur. 791. Cg. 2,236 ft.
J. B. Blanchard et al's No. 1 J. Ruiz, G. Ruiz Sur., Sec. 136. Drig. sh. 3,667 ft.
W. L. Catlin et al No. 1 Louis Escapule, J. Poitevent Sur. 73. R.U.
Hiawatha O. & G. Co.'s No. 1-A Herberger, Santos Flores gr. T.D. 5,875 ft.; W.O.C.
Landreth Prod. Co.'s No. 1 Caballero, J. Poitevent Sur. 281. M.I.M.
H. D. Rogers' No. 1 Rossen, R. F. Neeley Sur. 48. S.D. 1,200 ft.

Falls County

J. Shaunfield's No. 1 Barganier, J. M. Graham Sur. Bda. L.; S.S.O.; T.D. 1,188 ft.; recmtd. csg.; W.O.; cmt. failed to hold.

Frio County

Holland Oil Co.'s No. 1 Anna Witting, Dan T. Price Sur. S.D. 4,460 ft.

Guadalupe County

A. J. Hollifield's No. 1 A. J. Day, Jas. Hinds Sur. T.D. 2,837 ft.; 7-in. csg. 2,357 ft.; P.B. 2,692 ft.; swbd. sulf. wtr., S.S.O.; P.B. 2,415 ft.
Knute Evjen et al's No. 1 W. C. Brawner, J. D. Pickens Sur. S.D. 2,394 ft. 5½-in. csg. 2,300 ft.; reacd.
F. D. Spratt's No. 1 Wm. Zuchl, Claiborne Rector Sur. 38. S.D. 710 ft.
Wellington Oil Co. of Dela.'s No. 1 Wells. H.&T.C.R.R. Sur. 5. Top A.C. 3,397 ft.; T. Edw. L. 3,764 ft.; T.D. 3,787 ft.; abd.

Hidalgo County

Brinkocter Oil Co.'s No. 1 Daskam hrs. of Miguel Cano, Porc. 45. Drig. 3,020 ft.
Gulf State Oil Co.'s No. 2 Cardinas, San Salvador del Tule gr. 16-in. csg. 157 ft. drig. sh. 5,850 ft.
Humble O. & R. Co.'s No. 1 T. A. Ogg, Rio Bravo subd. Drig. sh. 6,915 ft.

Jim Hogg County

Daubert & Achning's No. 1 A. Vela, Joseph Odom Sur. 572. S.D. 698 ft.
DeLange & Rowe's No. 1 R. A. Walters, Casa Blanca gr. Loc.
Goldruss Drig. Co.'s No. 2 Gutierrez, Tyler Tap R.R. Sur. 163. T.D. 3,855 ft.; abd.
Henshaw Bros. and Mosser's No. 1 San Miguel, S.K.&K. Sur. 219. Cg. 5,150 ft.
Humble O. & R. Co.'s No. 2 C. F. Mestena O. & G. Co., C.&M.R.R. Sur. Sec. 389. Drig. sh. 535 ft.
C. A. Nibert et al's No. 1, Yeager Sur. 20. S.D. 1,316 ft.
Republic Nat. Gas Co.'s No. 1 Robt. Adams, G.H.&H.R.R. Sur. 103. T.D. 4,705 ft.; rmg.

Jim Wells County

Austin Pet. Co. No. 1 H. M. Reed (8 mi. NW Orange Grove), J. Poitevent Sur. Cmtd. surf. pipe 190 ft.; S.D. 210 ft.; abd.; skd. rig 100 ft. N.; R.U.&S.D.
DeLange & Rowe's No. 1 R. A. Wolters, Casa Blanca gr. S.D. 5,543 ft.
Henshaw Bros. et al's No. 1 San Miguel, S.K.&K. Sur., Sec. 219. Drig. sh. 5,086 ft.
H. H. Howell's No. 1 Clara Driscoll, La Anima Sola gr. T.D. 6,515 ft.; abd.
Reese & Dunn et al's No. 1 G. M. de Perez, Le Tinaja de Lara gr. Drk.
R. K. Taylor's No. 1 M. H. Reed, J. Poitevent Sur. Drig. sh. 2,396 ft.
Gus Tsesmelis et al's No. 1 Garcia hrs., La Anima Sola gr. R.U.

Karnes County

Clyde Eckols' No. 1 J. M. Newberry, Carlos Martinez Sur. T.D. 3,002 ft.; 5½-in. csg. 3,002 ft.; perf. csg. 2,942-48 ft.; tstg. gas and some oil.
Gar Oil Co.'s No. 1 R. L. Barnett, Alex C. Hunter Sur. T.D. 2,522 ft.; abd.
Gar Oil Co.'s No. 1 L. T. Lyssy, Andres Hernandez Sur. T.D. 2,443 ft.; abd.

Kendall County

C. M. Dewey's No. 2 Seidensticker, R. Davis Sur. No. 20. S.D. 835 ft.

Kimble County

A. L. Bierschwale's No. 1 F. W. Kraeke, Sur. 366. T.D. 1,083 ft.; T.A.

Kinney County

Cooper Gas Co.'s No. 1 L. L. Farr, Geo. L. Bledsoe Sur. 835. R.U.

Kleberg County

Humble O. & R. Co.'s No. 1 O. J. Mork, Rincon de Santa Gertrudis gr. Drig. sh. 3,610 ft.
Skelly Oil Co.'s No. 1 State, Laguna de Los Olmos gr., Tr. 385. Driving piling.

Lee County

Fred Pederson et al No. 1 Brown, David Hudson Sur. T. Glen Rose L. 6,600 ft.; S.D. 7,322 ft.

Live Oak County

H. F. Baker's No. 1 Herring, Stephen Hays Sur. S.D. 1,450 ft.
E. M. Jones' No. 1 West, Lot 400, Blk. D, of West subd. R.U.
Moore Dev. Co.'s No. 1 fee, R. W. Fant Sur. 238. Drig. 755 ft.
L. W. Stieren's No. 3 Lange, Thos. Adams Sur. T.D. 1,497 ft.

McMullen County

Cities Service Oil Co. and Continental Oil Co.'s No. 2-B Lowe, A. J. Martin Sur. T.D. 1,612 ft.
F. H. Gohlke's No. 3 Miles, Wm. Kohfler Sur. 78. Loc.
W. C. McBride, Inc.'s No. 2 Nueces Ld. & Lvstk. Co., E. W. Gemmel Sur. 91. T.D. 1,751 ft.
Roger Putnam's No. 1 Lucy Claunch, M. Hely Sur. 5. 10-in. csg. 200 ft.; S.D. 1,321 ft.
C. D. Scarborough No. 1 First Natl. Bk. of Rosebud, Jas. Garner Sur. S.D. 1,650 ft.

Medina County

T. J. Tapp's No. 1 Bendele, F. Sauer Sur. 117. S.D. 205 ft.
York Pet Co.'s No. 1 Kate Smith, Maria Ihnken Sur. 11. T.D. 948 ft.; P.B. 580 ft.

Milam County

Fritz Fuchs' No. 1 Unnaseh, Jose Justo Liendo Sur. S.D. 1,080 ft.

Nueces County

John Manley et al's No. 1 Ruegg, Geo. H. Pauls subd. of Driscoll ranch. Loc.
H. J. Porter et al's No. 1 A. R. Knetig, DeLores A. & I. Co. Sur. 145. 10¾-in. csg. 508 ft.; drig. sh. 6,020 ft.
Southern Minerals Corp.'s No. 1 J. S. Jolly, M. L. de Herrera gr., Sec. 29. Cg. 5,880 ft.
Southern Minerals Corp.'s No. 1 Robt. Whitleff, Rincon De Corpus Christi gr. T.D. 6,876 ft.; abd.

Refugio County

C. L. Norsworthy's No. 1 B. J. Fox, Jas. Fagan Sur. 20-min. D.S.T. 4,729-37 ft.; rec. 360 ft. oily mud; 540 ft. S.W.; S.D. 6,715 ft.
Norsworthy Prod. Co.'s No. 1 Wood, John Sinnott Sur. T.D. 6,508 ft. (cor.); S.D.

San Patricio County

Southern Minerals Corp.'s No. 1 Sam Sparks, John Bowen Sur. T.D. 6,015 ft.; abd.
Fred Wood et al's No. 1 C. E. Hart, Wm G. Burgess Sur. S.D. 5,308 ft.

Starr County

Clopton, Mitchell et al's No. 1 F. W. Seabury, J. A. Falcon, Porc. 30. 8¼-in csg. 88 ft.; T.D. 2,757 ft.; S.D.; S.W. sd.; 5½-in. csg. 1,401 ft.; perf. csg. 1, 328-33 ft.; tstg.; flwg. small amt. of oil per day.
C. L. Foster's No. 1 H. Garza, Juan Salinas, Porc. No. 71. S.D. 100 ft.
Interstate Minerals, Inc.'s No. 1 Green & Manning, J. J. Garza Falcon Porc. 81. T.D. 1,732 ft.; 7-in. csg. 1,155 ft.; S.D.
Lynes & Robertson's No. 1 Villareal, C. C.S.D.&R.G.N.G.R.R. Sur. 241. Loc.
Sun Oil Co.'s No. 1 Rodriguez, Santa Teresa gr. Cg. 5,037 ft.

Travis County

J. H. Gray's No. 1 Washington, Jose Antonio Navarro Sur. S.D. 1,703 ft.

Val Verde County

Joiner Oil Co. et al's No. 1 Clyde Sellers. Drig. bkn. L. 1,480 ft.

Victoria County

W. S. Boyle's No. 1 P. C. Meyer, Victoria townsite Sur., Blk. 3. T.D. 4,788 ft.; perf. csg. 4,776-79 ft.; pmpd. 68 bbl., 21 hrs.; started to show mud and S.W.
Colton & Colton's No. 1 W. C. Buckholtz, F. G. Hidalgo Sur., Lot 27. 10¾-in. csg. 710 ft.; S.D. 770 ft.
Mayo and Renwar Oil Co.'s No. 1 Bayer, Garcia Sur. T.D. 6,485 ft.; circulating; well tried to blow out; S.D.
Mayo, Thompson Drig. Co.'s No. 1 Ragsdale, V. Garcia Sur. Cg. 4,525 ft.
L. L. Smith's No. 1 Carolina Stubbs est., R. Manchola Sur. S.D. 4,515 ft.

Webb County

G. W. Bascom's No. 1 Geo. Adami, H.& G.N.R.R. Sur. 333. Drig. sh. 750 ft.
Circle Oil Co.'s No. 1 W. R. Hughes, G. C.&S.F.R.R. Sur. 1527. T.D. 2,613 ft.; abd.
O. W. Killam's No. 64 Bruni, M. H. Rodriquez Sur. 446. T.D. 1,879 ft.; 5½-in. csg. 1,830 ft.
Sinclair Prairie Oil Co.'s No. 1 Callaghan Ld. & Cattle Co., B.S.&F. Sur. 585, Loc.
Tide Water Asso. Oil Co. No. 7 Bruni, Blk. 7, M. Arispe gr. (deep test Bruni field). T.D. 8,959 ft.; well blew out; hole bridged; stk. D.S.; prep. to P.B. and test approx. 5,600 ft.; perf. D.P. 5,636-45 ft. and 5,621-31 ft.; tstd. dry; sqzd. off; perf. csg. 5,630-40 ft.; tstg.

Williamson County

H. C. Lefors' No. 1 H. J. Priesmeyer, Jehu Bevil Sur. 56. S.D. 1,107 ft.

Wilson County

Henshaw Bros.' No. 1 E. W. Schneider, Don Casper Flores Sur. 10-in. csg. 99 ft.
W. D. Moore et al's No. 1 Lorenz, Morris May Sur. S.D. 75 ft.
E. E. Young's No. 1 O. D. McMeans, C. W. Parrott Sur. R.U.

Zapata County

J. P. Martin et al's No. 1 Serapio Vela, El Grullo gr. T.D. 3,108 ft.
Ralph Ogden's No. 1 Dodier, El Socorro gr., Sh. 4. S.D. 2,274 ft.; D.S.S.

WEST TEXAS WILDCATS

Andrews County

Richmond Drig. Co. and T. F. Hunter's No. 1 University, 660 ft. N and E lines of Sec. 21, Blk. 11, University Sur. M.I.M.

Crane County

Gulf Oil Corp.'s No. 5 M. B. McKnight, Sec. 1, Blk. 21-B, P.S.L. Sur. Drig. 5,802 ft.
Gulf Oil Corp.'s No. 1-K University, 330 ft. N and E lines, Sec. 2, Blk. 31, University Sur. Bldg. road.
Gulf Oil Corp.'s No. 12 Waddell, Sec. 30, Blk. 26-B, P.S.L. Sur. 12-in. 532 ft. S.O. 3,215-20 ft.; drig. 3,670 ft.; S.S.G. 3,635 ft.

Crockett County

Continental Oil Co.'s No. 1 Todd unit, SW¼ Sec. 30, Blk. W.X., C.G.&S.F. Sur.; Ordovician test. Topped Simp. at 6,040 ft.; sul. wtr. at T.D. 7,010 ft.; P.B. to 6,620 ft.; P.B. 6,336 ft.; making 2 to 3 B.O.P.H.; tstg.
Continental Oil Co.'s No. 1-32 Todd, 1,980 ft. S and W lines, Sec. 32, Blk. WX, G.C.&S.F. Sur. Drig. 1,362 ft.
Continental Oil Co.'s No. 2 Todd, 1,980 ft. S and W lines of Sec. 29, Blk. W. X, G.C.&S.F. Sur. S.D.W.O. 472 ft., crooked hole.
Moore Bros.' No. 1 Henderson, Sec. 51 Blk. O.P., G.C.&S.F. Sur. S.D.R. 812 ft.
Stanolind O. & G. Co.'s No. 7 Todd-A, 990 ft. from S line, 330 ft. from W line, Sec. 67, Blk. UV, G.C.&S.F. Sur. W.O.C. 1,340 ft.

Ector County

R. H. Gill's No. 1 J. E. Parker, Sec. 12, Blk. 45, T.&P. Sur. Abd. at 145 ft.
M. A. Grisham et al's No. 1 R. B. Cowden, 600 ft. from N and E lines, Sec. 4, Blk. 45, Twp. 1n (deep test), T.&P. R.R. Sur. Prep. spud.
I. T. I. O. Co.'s No. 1 Johnson, Sec. 34, Blk. 43, Twp. 1s, T.&P. Sur. Heading 170 B.O.P.D. while drilling below 4,150 ft.
Landreth Prod. Corp. and Shell Oil Co., Inc.'s No. 1 J. L. Johnson, Sec. 43, Blk. 43, Twp. 1s, T.&P. Sur. Swbd. 21 B.O. 14 hrs. after acd. at 4,264-76 ft.; test est. 300 ft. O.I.H.; S.D.W.O. to D.D. or P.B.
Stanolind O. & G. Co.'s No. 1 W. F. Cowden, SW¼ Sec. 4, Blk. 43, Twp. 1n, T.&P. Sur.; deep-lime test. T. Yates sd. 2,790 ft.; drig. 4,827 ft.

Gaines County

Oil Well Drig. Co.'s No. 1 R. E. Sikes, Sec. 10, Blk. 25-A, P.S.L. Sur. Drig. 4,560 ft.
Stanolind O. & G. Co.'s No. 1 T. S. Riley, Sec. 11, Blk. H, D.&W. Sur. Shot 4,762-4,864 ft.; C.O.; bailed 1 bbl. hourly before shot; T.D. 4,864 ft.; swbd. 10 B.O. in 8 hrs.; bailed dry and bailed 10 B.W. in 9 hr.

Hockley County

Denver Prod. & Refg. Co. and Helmerich & Payne, Inc.'s No. 1 Whiteface Farms, 660 ft. from S and E lines Labor 22, Lge. 77, Reeves C.S.L. Sur. Loc.
Geo. P. Livermore's No. 1 R. D. Glimp, Sec. 8, Blk. X, P.S.L. Sur. Tstg. after 3rd stage acid treatment, made 143 B.O. in 5 hrs.

Irion County

W. S. Kelly's No. 1 Yates, Conrad Poppe Sur. 730. S.D.W.O. 345 ft.

Loving County

J. E. Whitesides' No. 1 fee, Sec. 24, Blk. 76. S.D. 35 ft.

Lynn County

R. H. Gill's No. 1 W. H. May, NE¼ Sec. 259, Blk. L, B.S.&F. Sur.; Honolulu Oil Co. farmout. Loc.
Guthrie Lake Oil Co.'s No. 1 Mary L. Shoe, Sec. 20, Blk. 8, E.L.R.R. Sur.; 800-ft. test. S.D.R. 265 ft.
H. F. Wilcox Oil & Gas Co.'s No. 1 E. L. Powell, 330 ft. from W and 990 ft. from S lines Sec. 134, Blk. 12, E.L. Sur. Loc.

Mitchell County

Ewing & Hanes' No. 1 G. I. Grable, Sec. 195, Blk. 3, H.&G.N. Sur.; 1,800-ft. test. S.D. 30 ft.
N. V. Hilburn's No. 1 E. T. Strain, Sec. 82, Blk. 97, H.&T.C. Sur. S.D. 250 ft.
Sinclair Prairie Oil Co.'s No. 1 E. E. Erwin, Sec. 1, Blk. 5, H.&T.C. Sur. Drig. 2,780 ft.

Pecos County

R. L. Baker's No. 1 White & Baker, Sec. 86, Blk. 194, G.C.&S.F. Sur. Drig. 375 ft., T.D.
Humble O. & R. Co.'s No. 1 Young, Sec. 33, Blk. 10, H.&G.N. Sur. Drig. 4,171 ft.
B. McCandless and General Crude Oil Co.'s No. 1 Virginia W. Crockett, Sec. 5, Blk. 110, T.C.R.R. Sur. T. Ellenburger 4,401 ft.; tstg. est. 6,000,000 cu. ft. gas after acd.; rng. tbg.; T.D. 4,479 ft est. 4,000,000 cu. ft. gas and 365 B.O.P.D.; S.I. for gage; made 531 B.O. in 5 hrs.
Phillips Pet. Co.'s No. 1 Sarah Byrne, Sec. 114, Blk. 11, H.&G.N. Sur.; lost hole; skd. 50 ft. N.; tight well 1,400 ft.
Sides' No. 1 Blackstone-Slaughter-Lackey, 250 ft. from S line, 1,100 ft. from W line, Sec. 20, Blk. 129, T.&S.L. Sur. Loc.
Skelly Oil Co.'s No. 1 J. S. Masterson (Ordovician test), Sec. 101, Blk. 10, H. &G.N. Sur. Drig. 3,511 ft.

Reeves County

T.A.T. Oil Co.'s No. 1 U. G. Orenderff, Sec. 10, Blk. 59, P.S.L. Sur. Drig. 1,430 ft.

Scurry County

Coffield & Guthrie's No. 1 Reiter, Sec. 155, Blk. 97, A.T.&T.C. Sur. P.B. 2,990 ft.; prep. reshoot for 3rd time.

Terrell County

E. M. Thomasson's No. 1 Bates, Sec. 31, Blk. 1, H.&G.N. Sur. S.D.O. 1,760 ft.

Tom Green County

Johnson's No. 2 Rape, Sec. 2, Blk. 1, H.&T.C. Sur. S.D.O. 370 ft.
Dan Short's No. 1 J. G. Davidson, 2,161 ft. from SL, 2,493 ft. from NW cor. L. P. Moore Sur. S.S.O.&G. 2,060-65 ft.; S.D.O. 2,935 ft.

Ward County

Gulf Oil Corp.'s No. 5 Wristen, Sec. 18, Blk. 5, H.&T.C. Sur.; scheduled Ordovician test. Drig. 2,995 ft.
Magnolia Pet. Co.'s No. 2-43 Sealy, Sec. 43, Blk. F, G.M.M.B.&A. Sur. W.O. 2,952 ft., T.D.; making 69,000,000 cu. ft. gas; incr. amt. oil; perf. lnr. 2,990-96 ft.; P.B. 2,925 ft.; tstd. sul. wtr.; cmtd. off perf. and W.O.C.
Merry Bros. & Perini's No. 1 Bird Hayes, Sec. 148, Blk. 34, H.&T.C. Sur. Drig. 2,975 ft.

Yoakum County

L. E. Hults' No. 1 Willard, 1,980 ft. from E line, 660 ft. from N line, Sec. 805, Blk. D, Gibson Sur. C.&P.
Sloan & Zook and T. N. Sloan's No. 1 J. E. Fitzerald, Sec. 22, Blk. D, Gibson Sur., extreme NE cor. of county. 7-in. csg. 4,812 ft.; S.D.W.O. 5,610 ft.

TEXAS PANHANDLE

Deaf Smith County

Uscan's No. 1 Farwell, Sec. 18, Blk. 3, X. Sur. C.O. 5,650 ft.

Lipscomb County

Phil O'Neil's No. 1 Jacob Koch, NW SW Sec. 539, T.&T.C.R.R. Sur. S.D. 1,100 ft.

Ochiltree County

James R. Macon et al's No. 1 W. R. Norris, SW SE Sec. 212, Blk. 43, H.&T.C. Sur. T.D. 6,274 ft.; test sec. at 5,000 ft.; est. 6,000,000 cu. ft. gas on D.S.T.; tstg.; bailing 6,274 ft.; unloaded csg. at well and preparing to test increasing shows of oil and gas; S.D.W.O. 6,274 ft.

Potter County

Canadian River Gas Co.'s No. 1 City of Amarillo, in city limits just north of city. Bldg. rig.
Lee Whitaker's No. 1 D. Pavliard, Sec. 101, Blk. 2, A.B.&M. Sur. Fish out; S.D. 915 ft., csg.

Sherman County

I. T. I. O. Co.'s No. 1 S. C. Bryant, C NW¼ Sec. 369, Blk. T-1, T.&N.O. Sur. S.D.W.O. 2,739 ft.

E. C. TEXAS WILDCATS

Anderson County

R. H. Williamson's No. 1 O. G. Rogers, Wm. Greenwood Sur., 6 mi. SW of Elkhart. S.D. 5,345 ft., T.D.; stk. pipe.

Angelina County

Ginter Bros.' No. 7 Copes hrs., J. Morin Sur., 3 mi. E of Diboll. S.D. 2,184 ft.

Bowie County

W. E. Neill's No. 1 Lewis Fort, L. Peters Sur., 2½ mi. NE Hooks. S.D. 960 ft.

Camp County

Harry Moss' No. 1 J... Venters, S. Wright Sur., 3 mi. SE Leesburg. O.W. D.D.; O.T.D. 5,710 ft.; R.U. to dpn. to 7,500 ft.; drig. 7,456 ft.

Cherokee County

C. C. Lanier's No. 1 W. O. Reagan, W. T. Smith Sur., 2½ mi. E of Mixon. Drk.
R. D. Salisbury No. 1 W. M. Shankle, J. A. Manchaca Sur., 1½ mi. NE Chilton. P.B. 1,103 ft.; S.D.; W.O.

Falls County

A. H. Bell's No. 2 Garrett, J. Sanchez Sur., NE of Lott. R.U. pump; bailed 4 B.O.P.H.; T.D. 1,260 ft.

Fannin County

C. Newburn's No. 1 A. G. Allen, M. Caldwell Sur., 7 mi. NE of Banham. Laying wtr. lines.

Henderson County

W. R. Manning's No. 1 Rowe & Baker, J. T. Childers Sur., 6 mi. SW Mabank. Loc.

Hill County

Carter-Bowland's No. 1 J. J. Atchison estate, E. Carroll Sur., 5 mi. W of Hillsboro. S.D. 85 ft.

Houston County

J. C. Wynne et al's (Shell Oil Co., Inc.) No. 1 G. E. Dorsey, M. Sallas Sur., 2½ mi. S of Percilla; E 102 ac. of tr.; 10,000-ft. test. D.S.T. 8,541-76 ft.; rec. mud cut with gas and oil; fsg. job completed; prep. D.D.

Kaufman County

W. H. McGee's No. 1 Rutland Savings Bk., John Baker Sur., 2¼ mi. NE of Tulosa. S.D. 20 ft.
T. G. Shaw, Tr.'s No. 1 Angus Wynne, B. S. Newman Sur., 8 mi. E Kaufman;

lower Trinity test. S.D. title trouble.

Limestone County

Peyton Bros.' No. 1 Harris, P. Varella Sur. P.B. to 4,495 ft.; S.D.W.O. 4,952 ft.

Murray Samuell and Zephyr Oil Co.'s No. 2 Cannon Barron, NE part of 320-acre tract in W. G. McKenzie Sur, half mile NE of pool opener. Drlg. 5,220 ft.

J. J. Tyrell's No. 1 A. G. Easterling, J. L. Chavert Sur., 11 mi. E of Groesbeck. S.D. 3,630 ft.

McLennan County

T. M. Smart's No. 1 J. W. Mann, C. O Campo Sur., 4 mi. S of Waco. S.D. 1,327 ft.

Nacogdoches County

Melrose Oil Co.'s No. 1 C. N. Wilson, J. Hall Sur., 250 ft. S line and 1,530 ft. E line of survey, 10 mi. SE of town of Nacogoches. S.D. 50 ft.

Navarro County

C. F. Carter's No. 1 Allen Eden, M Shire Sur., 2 mi. NE of Angus. S.D. 1,201 ft.

Guy Sitton's No. 2 R. D. Fleming, John Harris Sur., 450 ft. E of No. 1 dry hole. Bailed slight show oil and S.D. for test at 1,625 ft.

W. H. Warren's No. 1 L. Grey, E. Powers Sur., 9 mi. SE of Kerems. Drlg. 295 ft.

Red River County

Dave Flesch's No. 1 Bailey, J. Robbins Sur., 1 mi. W of Bagwell. S.D. 3,415 ft.

Kansas-Oklahoma Pet. Corp.'s No. 1 R. H. Ringwald, A. Moore Sur., 3 mi. W of Manchester. S.D. 1,000 ft.

Rusk County

Jeff Bolton's No. 1 Hall Wood, J. I. Sanches Sur., 2½ mi. NW of New Salem. Lost circ. and skd. rig to start new hole; T. Wdbne. with sat. at 4,145 ft.; S.S.O. 4,201 ft.; S.D. to test.

A. O. Whittington's No. 1 Kangerga Bros., Ign. Castro Sur., 9½ mi. N and slightly E of Pirtle. S.D. 80 ft.

Smith County

Shell Oil Co., Inc.'s No. 1 H. Campbell, P. Lively Sur., 1½ mi. N of Chapel; 9,500-ft. test. T. Paluy 5,533 ft.; T. Glen Rose 5,818 ft.; T. Tr. Pk. 8,247 ft.; S.D.W.O. 8,602 ft.

Sun Oil Co.'s No. 1 E. B. Huddle, Wm Dickerson Sur., 2 mi. S of discovery dist. producer in Chapel Hill area; drlg. 6,062 ft.

Trinity County

Gossage et al's No. 1 First Natl. Bnk., B. F. Wright Sur., S of Trinity. R.U. and S.D.

NORTH TEXAS WILDCATS

Archer County

C. B. Christie & Phillips' No. 1 H. H. Taylor, 330 ft. from S and 3,358 ft. from W lines of Harvey Cox Sur., Abst. 67. M.I.M.

Clark-Cox et al's No. 1 J. M. McCarty, NW cor. C. C. Brawn Sur., Abst. 20 Loc.

Continental Oil Co.'s No. 1 L. F. Wilson, NE cor. SW¼ Sec. 20, H.&T.C. Sur. (1½ mi. E of Hull-Silk). Set sur. pipe and S.D.; W.O.R.

W. B. Hamilton's No. 5 C. E. Graham, J. D. Young Sur. A-1249. 6⅝-in. 5,205 ft.; P.B. 4,930 ft.; perf. csg. 4,750-70 ft.; treated 1,000 gal.; tstg.

G. E. Kadane & Sons' No. 1 Jos. Hemmi B, Sec. 61, Clark & Plumb, Blk. 3. Abd. 4,161 ft., T.D.

Petroleum Producers Co.'s No. 1 D. L. Wolf, NW cor. Sec. 2, J. Poitevent Sur., Abst. 1310 (5,200-ft. test). Drlg. 1,171 ft.

Roeser & Pendleton's No. 1 J. R. Parkey, Sec. 11, Blk. 3, H.&T.C. Sur. (north outpost to Mankins deep pool). Loc.

Waldo E. Stephens et al's No. 1 Hattie B. Adae, SE part of Blk. 7, Palo Pinto Co. Sch. Lds., 3 mi. SE of Griffin pool Fsg. drill stem 4,600 ft., T.D.

Baylor County

Hall-Jordan Oil Co.'s No. 1 D. E. Blackman, SE NE Sec. 28, Blk. 3, H.&T.C. Sur. Drlg. 2,880 ft.

Clay County

L. T. Burns' No. 1 E. Henderson, SW cor. SE¼ Sec. 2615, T.E.&L. Sur. Loc.

L. T. Burns' No. 1 J. G. Mullins, 330 ft. from N and E lines of N 160 ac. of Sec. 2617, T.E.&L. Sur. Loc.

Shell's No. 1 Davis, Sec. 93, J. H. Belcher. O.W.D.D.; S.D. 5,136 ft.

Shell Oil Co., Inc.'s No. 1 M. L. Henderson, 6,000-ft. test, in Blk. 2605, T. E.&L. Sur. S.S.O. 3,419-36; S.S.O. 3,507-10 ft.; S.S.O. 3,573-85 ft.; S.S.O. 3,655-57 ft.; T.D. 3,824 ft.; P.B. 3,570 ft.; cmtd. 4½-in. 3,494 ft.; drlg. plug; swb. 53 B.O. and 60 bbl. S.W.; P.B. to 3,497 ft. and W.O.C.; Dale wtr. sur. showed S.W. from bottom of pipe.

Cooke County

Big Indian Oil & Development Co.'s No. 1 T. E. McFadden, SW cor. 212-ac. tract, D. Martin Sur., Abst. 654. R.U.

Cranfill & Staley's No. 1 S. H. Peery, SW B.B.B.&C. Sur., Abst. 145. Prep. resume drlg. 2,098 ft., T.D.

Heydrick et al's No. 1 W. Franklin, A. Rodiquez Sur., Abst. 851. Spd. and S.D.

Mudge Oil Co.'s No. 1 Bonner, 330 ft. from S and E lines of east 30 ac. of west 61 ac. of south 101 ac., A. Emanuel Sur., Abst. 1196. M.I.M.

Mudge Oil Co.'s No. 1 Sam Seagrave, 330 ft. from SW cor. of 193 ac. lease, O.M. Gray Sur., Abst. 415. Loc.

C. E. Sykes' No. 1 H. Christian, 1,000 ft. from W and SW lines, J. P. Bailey Sur., Abst. 70. S.D. 300 ft.

Cottle County

J. E. Burns et al's No. 1 J. E. Moss, Sec. 5, Blk. L, A. Forsythe Sur. Jnkd. 225 ft.; skd. 20 ft. S; S.D. 1,823 ft.

Denton County

Jones Drlg. Co.'s No. 1 H. K. Armstrong, L. Moore Sur., Abst. 824. S.S.O. 1,626-32 ft.; flwd. 19 bbl. in 11 hrs.; tstg.

Foard County

Foster Pet. Corp.'s No. 1 E. M. Gamble, 4,500-ft. test; E. 180 ac. of S½ Sec. 13, Blk. A, H.&T.C. Sur. Had gas sd. 2,300-29 ft.; est. 5,000,000 cu. ft.; T.D. 3,417 ft.; S.D. to run csg. and test gas sd. 2,300-29 ft.; perf. 2,305-09 ft.; 5 shots; blowing est. 5,000,000 cu. ft. gas and spray S.W.

Hardeman County

Carter & Taylor's No. 1 Norton, NW cor. 91-ac tr. in Blk. 3, Robt. Young Sur., 16 mi. N of Quanah. S.D. 256 ft.

Norris & Gilbert's No. 1 Robert Weekley, SW SE Sec. 87, Blk. 16, H.&T.C. Sur. Spdg.

Jack County

Buffalo Oil Co.'s No. 1 Riddle, S. L. Clark Sur.; Abst. 1944, 3,100-ft. test. Cd. sd. 2,916-28 ft.; S.S.O.; S.D.

J. B. Cooper and Paul P. Steed's No. 1 Mathis, J. H. Nesmith Sur., Abst. 1562. Drlg. 1,710 ft.

W. L. Forbes et al's No. 1 N. W. Davis, B.B.&C. Sur. S.D. 1,500 ft.

Hanlon-Buchanan, Inc.'s No. 1 A. T. Smith, NE cor. Sec. 2, S.P.R.R. Sur., Abst. 2175. Drlg. 2,536 ft.

Harper Pet. Co.'s No. 1 J. W. Kinder, SW¼ Sec. 2667, T.E.&L. Sur., Abst. 762. Drlg. 1,972 ft.

Pitzer & West's No. 1 Sloan, Sec. 2786, T.E.&L. Sur. Rng. 8-in.; cg. dry. sd. 2,770-80 ft.; S.D. 3,840 ft.

Montague County

W. H. Gant and Continental's No. 1 J. I. Brown, Sec. 58, E.T.R.R. Sur. 6⅝-in. 6,843 ft.; brkn. sdy. L. S.O. 6,843 ft.; treat. 8,000 gal. acd.; test showed O.& G. 7,036-56 ft.; T.D. 7,333 ft.; waiting for mach. to run 5½-in. per. liner at 6,843-7,333 ft.

W. B. Omohundro's No. 1 Seay, Sec. 32, Blk. 4, H.&T.C. Sur. (5,500-ft. test). Drlg. 4,066 ft.

Wm. J. Payne's No. 1 T. M. Baker, NW¼ Lot 42, W. J. Wells Sur., Abst. 844. 5,000-ft. test. Loc.

Sinclair Prairie Oil Co.'s No. 1 W. B. Howard, W. Wallace Sur., Abst. 841 5,000-ft. test). Drlg. 4,230 ft.

Texas Co.'s No. 1 J. P. Martin, 990 ft. S and E lines of Martin area in C. Barnes Sur., Abst. 48 (2 mi. E of Benton-Holmes field). Drlg. 3,590 ft.

Wichita County

E. C. Harlin, Jr., et al's No. 1 I. H. Kemner, SE cor. Blk. 28, Lge. 1, Denton Co. Sch. Lds. (5,200-ft. test). Loc.

Bert Ligon's No. 2 C. F. Collins, SW cor. J. T. Tyler Sur., Abst. 568. Drlg. 3,630 ft.

W. B. Omohundro et al's No. 1 L. N. Lochridge, L. Netherly Sur., Abst. 240 (5,000-ft. test). Cmt. surface pipe.

Wilbarger County

H. G. Gay's No. 1 A. S. Ross, 1,320 ft. EL, 660 ft. SL, Sec. 65, Blk. 15, H.& T.C. Sur. Drlg. 1,710 ft.

Rogers & Cavin's No. 1 A. P. Morris, Sec. 3, Blk. 14, SW Harrold. S.D. 2,809 ft.

Wise County

W. F. Holifield et al's No. 1 J. Redell, Rebecca Coleman Sur., Abst. 155, 2 mi. E of Bridgeport. Moved off spdr.

H. M. Muse's No. 1 F. F. Kaker, Blk. 16, Montagorda Co. Sch. Ld. Pits.

Young County

F. T. Conner's No. 1 Wright McClatchey est., SW cor. Sec. 284, T.E.&L. Sur. Loc.

Cosden Pet. Corp.'s No. 1 W. E. Steele est., NE part of R. M. Burton Sur., Abst. 8, 7 mi. SE Graham. 4,200-ft. test; tight hole. 6⅝-in. 3,734 ft.; tstg. 3,835-85 ft.; est. 10,000,000 cu. ft. gas; S.D. 894 ft.

H. W. Dyer's No. 1 M. G. Cheney. M. L. Terry Sur., Abst. 1261. Drlg. 690 ft.

L. A. Long's No. 1 J. S. Williams, 3,000-ft. test in NE part of S. H. James Sur., Abst. 1465. 8¼-in. csg. 1,710 ft.; S.S.O. 1,720-30; tstg.

K. R. March's No. 1 Ed. Burton, NE cor Blk. 99, J. A. True Sur., Abst. 1640 4 mi. SE Graham, 4,250-ft. test. Drlg. 3,470 ft.

A. T. Strong et al's No. 1 E. C. Stovall, Sec. 2946, T.E.&L. Sur. (4,800-ft. test). Drlg. 4,133 ft.

Taubert & McKee Drlg. Co.'s No. 1 Shanafelt, P. Pointevent Sur., Abst. 1309. 6⅝-in. 4,012 ft.; treating 2,000 gal. acid 4,437-4,500 ft.; P.B.; H.F.W 4,398-4,410 ft.; R.U. spdr.

James Toughy et al's No. 1-C F. Akers, W. McClure Sur., Abst. 183, S.S.G. 3,994-4,005 ft.; S.O. 4,005-20 ft.; est. 4,000,000 cu. ft. gas; tstg.

WEST CENTRAL TEXAS DISTRICT

Brown County

Shallow Oil, Inc.'s No. 1 S. M. Black, Wm. Ranch road, 7½ mi. SE Brownwood. S.D.R. 772 ft.

Wilson Oil Co., Inc., No. 1 M. Bowden, Sec. 138, W. E. Gilliland Sur. Fsg. 2,114 ft.

Callahan County

Green & Owens' No. 1 Murray, 156 ft. from N and 1,725 ft. from E lines of Jacob Trask Sur. 761. Loc

Reeves' No. 1 Alexander, NE part of Sec. 12, E.T. R.R. Co. Sur. U.R. csg. 750 ft.

J. L. Reeves' No. 1 N. A. Estes, SW¼ Sec. 4; Blk. 8, S.P. Sur., 2½ mi. south Bowles pool. Loc.

Coleman County

Kynaston-Culbertson-Culbertson & Bozeman No. 1 J. P. McCord, Sec. 159, J. W. Meeks Sur. Rng. csg. 2,625 ft.

J. C. Ort's No. 1 Emet Walker, SE cor. Hicks Sur. W.O.C. 700 ft.

E. B. Tinsley and C. C. Campen's No. 1 W. Webb, H. Odle Sur. 178. S.D.O. 500 ft.

Eastland County

Butler & Horne and E. J. Keough's No. 1 L. Waters, Sec. 83, Blk. 3, H.&T.C. Sur. Drlg. 500 ft.

F. S. Holden's No. 1 J. F. Nichols, L. A. McDonals Sur., Abst. 829. S.D.O. 3,175 ft.

J. L. Reeves' No. 1 J. V. Parker, NW part of Wm. Van Norman Sur. Drlg. by tools 3,077 ft.

W. A. Stiles et al's No. 1 H. F.. Duncan, Sec. 10, Blk. 2, H.&T.C.R.R. Sur. Pits.

Dobbs Oil Corp.'s No. 1 Thomasson, S. H. Key Sur., 330 ft. from N and 846 ft. from E lines of 80-acre tract. M.I.M.

Dobbs Oil Corp.'s No. 1 Mrs. R. L. Poe, 1,320 ft. from S and E lines of SE¼ Sec. 37, Blk. 3, H.&T.C. Sur. Loc.

Erath County

T. Gray's No. 1 C. Young hrs., NW cor. of Stephen Smith Sur., Abst. 682. &T.C. Sur. (6,000-ft. test). R.U.

T. G. Jackson No. 1 J. W. Taylor, Prater Sur., Abst. 1029, 4 mi. NE of Desdemona. Drlg. 2,475 ft.

J. F. Morissey et al's No. 1 R. J. Sikes, J. Hargrave Sur., 6 mi. N of Stephenville, 5,000-ft. test. Drlg. 1,480 ft.

Fisher County

Montour Prod. Co.'s No. 1 Taggart, 1,980 ft. W and S lines, Sec. 184, Blk. 2, H. &T.C. Sur. (6,000-ft. test). R.U.

S. and D. Daube's No. 2 Bennett, NE¼ Sec. 51, Blk. 2, H.&T.C. Sur. S.D. test line 3,887-3,704 ft.; swbd. 28 B.O. and 4 B.W. daily at 3,640 ft.; T.D. 3,705 ft. S.D. 3,705 ft.

Hamilton County

A. J. Caldwell's No. 1 W. W. Jones, 1,002 ft. from NE and 150 ft. from SE lines of W. H. Crowder Sur. S.D.O. 480 ft.

Wallace & Vickers' No. 1 C. C. Lund, J. P. Bailey Sur. 51. S.D.O. 3,453 ft.

Haskell County

K. N. Nowels' No. 12 M. S. Pardue, SW cor. Sec. 1, S.F.I.W. Sur., 4½ mi. east Stamford. S.S.O. 2,235-52 ft.; S.S.O. 3,399-3,410 ft.; prep. acidize 3,395-3,420 ft.; est. 25 B.O.P.D., natural; reaming csg. from 3,225 ft. to 3,391 ft.; will cmt. csg. and acidize from 3,398-3,404 ft.

Jones County

Danciger Oil & Ref., Inc.'s No. 1 P. V. Nelson, SE¼ Sec. 186, B.B.B.&C. Sur., 4 mi. SE Stamford. Drlg. 2,530 ft.

J. E. Farrell's No. 1 F. B. Reid, NW¼ Sec. 31, D.&D. Sur. (3,500-ft. test). Spdg.

T. D. Humphrey's No. 1 H. C. Hall, SE Sec. 1, Blk. 17, T.&P. Sur., 5 mi. N of Hawley pool. U.R. 1,700 ft.

Iron Mountain Oil Co.'s No. 1 I. F. Wiley, 330 ft. from S and E lines of SW¼ Sec. 14, Deaf & Dumb Ld. Loc.

Keeler's No. 1 Radford, SE¼ Sec. 20, Blk. 4, H.&T.C.R.R. Sur. S.D.O. 1,800 ft.

W. F. Snebold's No. 1 J. Jeffreys, Sec. 7, Blk. 15, T.&P. Sur., 1½ mi. W of Sandy Ridge pool. Drlg. 3,110 ft.

Johnson County

Geo. C. Foster's No. 1 Pennington, C W 40 ac. of J. E. Pennington 247-ac. tr., ½ mi. SW of Cleburne; contract depth 3,500 ft. Loc.

Mills County

A. W. Tanner's No. 1 M. J. Ivy, M. Rhyne Sur., 2 mi. SW of Ebony; contract depth 1,450 ft. Loc.

Palo Pinto County

J. Jones' No. 1 R. H. Gauldin, NW cor. Sec. 1743, T.E.&L. Sur. S.D.O. 1,400 ft.

Palo Pinto O. & G. Co.'s No. 1 F. A Johnson, Sec. 61, Burleson Co. Sch. Lds. T.D. 3,330 ft.; P.B. 3,227 ft.; S. D. 3,345 ft., T.D.

Parker County

Brown & Gardner Bros.' No. 1 Gilbert. T.&P. Sur., Abst. 1958. Drlg. 3,857 ft.

Runnels County

J. E. North's No. 1 J. W. Reese, Day Ld. & Cattle Co., 2½ mi. S of McCullen. W.O.C. 2,030 ft.

Shackelford County

Georgian Oil Corp.'s No. 1 Black ranch, C NE¼ of T.E.&L. Sur. No. 390, 10 miles NE of Albany, Ordovician test. Drlg. by csg. 1,830 ft.

Swann & Gorsuch's No. 1 Sam Lazarus, SE SE Sec. 80, Blk. 13, T.&P. Sur. Loc.

Stephens County

Grace & Woods' No. 1 Joe Beaty, NE cor. W. M. Bales Sur. 1110 (semiwildcat.) Prep cmt. csg. on sat. at 3,614 ft.

Pitzer & West and Brazos-Young Oil Corp.'s No. 2-B N. G. Price, SE cor. E½ SW Sec. 67, B.A.L. Sur. Saturation in lime from 3,510-14 ft. 3,210 ft.

Stonewall County

Shell Oil Co., Inc.'s No. 1 A. E. Smith, Sec. 143, Blk. 1, H.&T.C. Sur.; 6,000-ft. test. S.S.O. 4,395-97 ft.; drlg. 5,200 ft.; S.S.O.

Throckmorton County

Normandie Oil Corp.'s No. 1 Travis Co. Sch. Lds., Sec. 37, Abst. 254, 5,500-ft. test. Drlg. 1,512 ft.

Taylor County

J. C. Turner's No. 1 E. A. Sheppard, NE SW Sec. 19, B.A.L. Sur. S.D. 1,215 ft.

FLORIDA

Dade County

Wm. G. Blanchard et al's No. 1 Everglades, 200 ft. E, 100 ft. N, SE cor. Sec. 31-53s-35e. Drlg. 35 ft.

Levy County

Florida Oil Discovery Co.'s No. 2 Cedar Key, SW SW NE Sec. 9-15s-13e. T.D. 5,266 ft.; S.D. 4,150-79 ft. Set 4-in. csg. 4,230 ft.; perf. 4,150-79 ft.; ran tbg. and swbd. slight trace oil and S.G. Bailing.

Harkey & Houck's No. 1 Crapps, Sec. 15-14s-17e. Drlg. 910 ft. No report.

Nassau County

St. Mary's River Oil Corp.'s No. 1 Hillard Turpentine Co., NW cor. NW SE Sec. 19-4n-24e. Reported S.O. 4,795-4,810 ft.; S.D. 4,814 ft. T.D.

MISSISSIPPI

Attala County

F. R. Jackson's No. 1 Federal Land Bank, 410 ft. S, 620 ft. E NW cor. NW SE Sec. 29-16n-9e. Will spud Feb. 1.

Kosciusko Oil Co.'s No. 1 Jones, 600 ft. NW cor. Sec. 5-15n-9e. Loc.

P. & M. Oil Co.'s No. 1 J. A. McMillin, 300 ft. SW cor., SE SE Sec. 26-13n-5e. Drk.

Chickasaw County

Jeva Winters' No. 1 W. C. Flaherty, SE cor. SE SW Sec. 8-13s-3e. Loc. abd.; will not drill.

Choctaw County

Garland Anthony et al's No. 1 Ballard, SE cor. Sec. 8-18n-1e. T.D. 22 ft.; S.D.

Copiah County

Triangle Drlg. Co.'s No. 1 W. W. Broome, 153 ft. SW cor. SW SE Sec. 1-10n-8e. T.D. 15 ft.; arng. resume drlg. Feb. 1.

Hinds County

Crescent Oil Mill's No. 1 fee, E side Mill St., fire zone No. 3, City of Jackson, Sec. 3-5-1e. Set 8⅝-in. csg. 822 ft.; T.D. 2,465 ft. Set 5½-in. csg. on btm. S.D., cold weather.

Issaquena County

Germany, Lucy & Fair's No. 1 Mohanna, E½ SW Sec. 9-18n-3e. M.I. rig.

W. E. Hall's No. 1 Irby Charping, approx. C NE NW Sec. 29-10n-8w. Drk.

Locke & Mellard's No. 1 W. Gary, 660 ft. SE cor., NW Sec. 14-9n-6w. Loc.

Itawamba County

G. C. Grasty et al's No. 1 Ky. Lbr. Co., 1,320 ft. E, 660 ft. S, C Sec. 7-10s-10e. Twisted off D.S.; skd. 24 ft. S and spd.; set 10¾-in. csg. 170 ft.; S.O. 1,500 ft.; T. Trenton L. 1,690 ft.; T.D. 1,794 ft.; bailed dry. Drlg. hd. L. 1,842 ft.

Jefferson Davis County

F. E. Courson et al's No. 1 L. J. Bailey, 330 ft. SW cor. SW NE Sec. 4-6n-18w. Set 8⅝-in. csg. 932 ft.; cd. 2,853-61 ft.; rec. 6-in. sd.; gas odor; T. Wlx. 3,512 ft.; cd. 3,639-71 ft.; rec. sd. S.G.; D.S.T. 3,651-71 ft.; rec. 1,250 ft. S.W. and gas bubbles in 10 min.; B.H.P. 1,950 lb.; spud to 4,018 ft.; S.D.

Kemper County

M. R. Crabb et al's No. 1 W. T. Caldwell, NW SE Sec. 25-9n-15w. 10¾-in. csg. 86 ft.; set 6-in. csg. 1,320 ft.; T.D 1,640 ft.; acid. with 1,000 gal.; S.D. W.O.

Lamar County

Miss.-La. Oil Synd.'s No. 1 Simmons, 1,020 ft. N, 56 ft. W, SE cor. NE Sec. 32-3n-14w. S.D. 920 ft. (cor. T.D.).

Lauderdale County

B. F. Melat's No. 1 Lockard, C SW SW Sec. 26-7n-15e. Will spud Feb. 1.

Monroe County

Willmut G. & O. Co.'s No. 1 Roberts NW¼ Sec. 18-13s-17w. D.S.T. 2,410-30 ft.; Amory gas zone, dry; S.G. 2,844 ft.; T.D. 2,882 ft. (cor.).

Pike County

S. R. Crouch's No. 1 Cupit, 380 ft. N. 660 ft. W, SE cor. NE SW Sec. 25-2n 7e. Set 6-in. csg. 729 ft.; S.D. 1,703 ft. (cor.).

Prentiss County

Home Dev. Co.'s No. 1 Mrs. A. Allen, Sec. 8-7s-9e. T.D. 1,527 ft.; S.D.

Sharkey County

Eureka Pet. Co.'s No. 1 W. H. Cooper, 1,980 ft. S, 660 ft. W NE cor. Sec. 13-14n-6w. Spd. Feb. 1.

Simpson County

Cleve Love et al's No. 1 N. E. Garner, 300 ft. N and E of C Sec. 1-10n-17w. O.W. D.D.; O.T.D. 3,145 ft.; M.I.M.

Warren County

H. C. Cummings et al's No. 1 T. H. Morrissey, C E½ W½ NE Sec. 8-17n-2e. Spud. and S.D. 10 ft.

Yazoo County

Harry Hanbury et al's No. 1 Brooks, SW Sec. 17-10-2. Loc.

Hill & Hill et al's No. 1 Kinkead Plantation, 1,796 ft. SE cor. NE¼ Sec. 31-11-3. 7⅝-in. csg. 128 ft.; S.D. cold weather.

Hassie Hunt's No. 3 Johnson, C NW SE Sec. 11-10-3. Drlg. 4,206 ft.

Hassie Hunt's No. 1 Ida Fair, C NE SW Sec. 13-10n-3w. Woodruff sd. 4,585-4,605 ft. (oil); Stevens sd. 4,945-73 ft. (possibly S.W.); set 7-in. csg. 4,550 ft.

Edgar Johnson's No. 3 Brumfield, C SW SE Sec. 2-10-3. Spdg.

Jones & O'Brien Bros.' No. 1-C Stevens, C SE NE Sec. 11-10-3. Drk.

Jones & O'Brien's No. 2-C Stevens, C NE NE Sec. 11-10-3. Woodruff sd. 4,729-62 ft.; set 7-in. csg. 4,723 ft.; T.D. 4,750 ft.; W.O.C.

Robt. P. Lake's No. 1 Exum Est., C SW NE Sec. 13-11-2. Will spud Feb. 18.

J. R. Lockhart et al's No. 1 Frank Brooks, W½ SE NW Sec. 17-10-2w. T.D. 4,012 ft.; prep. resume drlg.

Nelson Bros.' No. 1 S. S. Stoner, C SE NW Sec. 2-11-5w. Loc.

Plains Prod. Co.'s No. 1 Milner, 546 ft. N, 660 ft. E SW cor. SW SW Sec. 7-10-2. Total depth 5,418 ft.; flowed salt water; show oil; D.&A.

Plains Prod. Co.'s No. 2 Milner, 660 ft. E, 1,980 ft. N SW cor., Sec. 7-10-2. Loc. (cor.)

Fullwood Purifoy's No. 1 O'Neal, 660 ft. N, 300 ft. W, SE cor. SW¼ Sec. 22-10-3. Loc.

R. B. Sanders' No. 1 E. W. Milner, 369 ft. S, 330 ft. E, NW cor. Sec. 18-10-2. Loc.

Union Prod. Co.'s No. 3 Perry, C NW NE Sec. 24-10-3. Set 10¾-in. csg. 605 ft.; T.D. 832 ft.

Union Prod. Co.'s No. 1 Stevens, C NW NW Sec. 13-10-3, O.W.W.O., O.T.D. 6,112 ft. P.B. 4,973 ft.; set 1st retainer 1,820 ft.; perf. 4,808-10 ft.; 2nd retainer 4,898 ft.; recomp. 750 B.P.D.; 50% S.W.; ¼-in. ck.; went dead; may abandon.

Union Producing Co.'s No. 3 Stevens, C NE NW Sec. 13-10-3. 10¾-in. csg. 1,466 ft.; T.D. 4,503 ft. Woodruff sd. 4,473-86 ft. Set 7-in. csg. 4,470 ft. Comp. 383 B.P.D., 21/64-in. ck.; T.P. 60 lb.; C.P. 215 lb.; T.D. 4,503 ft., sh.

Union Prod. Co.'s No. 4 Stevens, C SE SW Sec. 12-10-3. Set 10¾-in. csg. 635 ft.; cg. 4,433 ft.

Union Prod. Co.'s No. 6 Stevens, C NE NE Sec. 13-10-3. Loc.

Union Prod. Co.'s No. 9 Stevens, C SW SW Sec. 24-10-3. Set 10¾-in. csg. 610 ft.; W.O.C.

Union Prod. Co.'s No. 6 Woodruff, C SW NW Sec. 13-10-3. R.U.

Whigate Oil Co.'s No. 1 Robertson, 330 ft. NW cor. Sec. 20-10-2. Loc.

EAST TEXAS

(Border Counties)

Harrison County

M. & H. Oil Co.'s No. 1 Vaughn, A. P. Hope Sur. Cg. sd.&sh. 2,314 ft.

Marion County—Other

A. F. Anding's No. 1 Duke Hart, M. G. Noll Sur. T.D. 2,402 ft., sd.&sh.; set 5-in. csg.; swbg.

Tom Bell's No. 2 Moseley, D. Lane Sur. T.D. 2,640 ft.; 6⅝-in. csg. 2,500 ft.; swbd. S.S.O.; W.O.

H. N. Binge's No. 1 W. P. Stiles, 950 ft. S, 4,900 ft. E NW cor., M. G. Nall Sur. Set 10-in. csg. 42 ft.; S.D. 910 ft.

R. W. Cosby's No. 1 Stiles, J. G. Reeves Sur. T.D. 2,406 ft.; W.O.S.R.

M. D. Fitzwater's No. 1 Mrs. Mary Duncan, Jesse Fitzgerald Sur. T.D. 2,577 ft.; D.&A.; S.O.; T. Georgetown 2,562 ft.

J. D. Reynolds' No. 5 Terry est., W. Coore Sur. T.D. 2,359 ft.; W.O.S.R.

J. D. Reynolds' No. 6-A Terry, W. Coore Sur. T.D. 2,517 ft., sdy. sh.; W.O.S.R.; 6⅝-in. csg. 2,320 ft.

Sanders & Wyckliffe's No. 1 W. P. Stiles, M. Noll Sur. S.D. 2,406 ft.

John Wrather's No. 1 Torrens, T. J. White Sur. Drlg. sh. 2,120 ft.; 10¾-in. csg. 60 ft.

The economical way to keep drum flanges in good, safe condition is to grind them to mirror finish as soon as grooving starts. This saves metal and brake lining and prolongs flange life.

The economical way is to use a P-B Portable Flange Grinder that can be moved up to the job and be working in a few minutes, without the long shut-down following flange removal. Grind your flanges right on the drawworks.

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Canadian Fields

Completions and Operations in Northwest and in Ontario

By VICTOR LAURISTON

CHATHAM, Ont., Jan. 29.—The Alberta Conservation Board on January 23 announced an increase in the aggregate Turner Valley crude allowable from 12,000 to 18,000 bbl. a day, retroactive to January 19. In determining the new allowable, the board took into account the completion of Home Oil Co.'s No. 4 as a large producer, and the approaching completion of three other wells. New completions since the 12,000-bbl. allowable was set have increased the actual allowable to 12,452 bbl.; but actual consumption from the field since January 1 has reached around 17,000 bbl. a day, the difference being made up by drawing from field storage.

On January 20, the field potential, as measured through 1-in. choke, was placed at 70,000 bbl. from 95 wells, with 2 other wells awaiting test.

Turner Valley Completions

In southwestern Turner Valley Royalite Oil Co.'s No. 46, LSD 2, Section 17 18-2w5, finished 440 ft. in the lime at 7,994 ft., gave 2,536 bbl. a day on government test through 1-in. choke after acidizing. The figure is one of the largest recorded since this form of testing was instituted, comparing with Northwest-Hudson's Bay's No. 1 with 2,660 bbl. and Frontier Royalties' No. 1 with 2,608 bbl., and exceeding Home Oil Co.'s No. 2 with 2,214 bbl. a day. Location is on acreage of Calgary & Edmonton Corp. which holds 12½ per cent gross royalty, the remaining 87½ per cent being divided two-thirds to Royalite and one-third to Calgary & Edmonton, drilling costs having been shared in that ratio. The completion directs renewed attention to the possibilities of a further southwesterly extension of the producing area, which is being cautiously explored by the Royalite company and its affiliates.

In the original west-flank area, Command Oils' No. 2, LSD 11, Section 29-18-2w5, finished at 8,184 ft., 486 ft. in the Madison, showed 1,375 bbl. a day on 1-in. choke, and was given temporary allowable of 256 bbl., which will be increased under the new schedule.

North Turner Valley Producer

In North Turner Valley Home Oil Co.'s No. 4, LSD 9, Section 28-20-3w5, finished at 8,332 ft. after drilling 487 ft. of lime, cleared itself easily and developed 312 bbl. in 24 hours on preliminary test before acidizing. Testing was under unfavorable conditions owing to extreme cold, the oil being run to storage tanks a mile distant. The crude is 41 gravity and the gas-oil ratio about 1,200 cu. ft. to the barrel. Acid treatments are being given in both the upper and lower lime in preparation for government test. The well is slightly lower on structure than Home's No. 2 Millarville, and the gas-oil ratio slightly lower. Initial treatment with 15,000 gal. of acid was given in the lower porous zone, and tanks have been erected for the production test. Tubing was pulled and packer set to insure separate flows from each horizon. The test got the Madison at 7,845 ft., the lime continuing dense to 8,000 ft., with about 70 ft. of porosity in the upper zone. The intervening dense zone ran from 8,070 to 8,150 ft., followed by about 60 ft. of the lower porous zone.

Tests in the Lime

Home Oil Co.'s No. 3, LSD 1, Section 33-20-3w5, is below 7,775 ft. after getting the Madison at 7,688 ft.

In the west flank area of South Turner Valley Anglo-Canadian Oil Co.'s No. 7, LSD 9, Section 31-18-2w5, is below 8,157 ft. after getting the Madison lime at 7,930 ft.

In West Central Turner Valley Vanpeg Royalties' No. 1, LSD 9, Section 5-19-2w5, got the Madison limestone at 6,415 ft. after drilling through an unexpected thickness of belemnite conglomerate and poker-chip shales at the bottom of the Fernie formation. Test is preparing to resume after setting casing in the top of the lime.

West Central Field

In Section 18-19-2w5, West Central Turner Valley, Okalta Oil Co.'s No. 9, LSD 13, has derrick up and is moving in equipment. Davies Petroleums' No. 5, LSD 10, is below 4,149 ft. Calmont-Northwest's No. 1, LSD 3, is below 3,346 ft. and getting close to the Benton formation.

East Central Alberta

On the Battleview structure in East Central Alberta Franco-Battleview's No 3 has been located in LSD 13, Section 20-45-5w4. Test will be drilled jointly by Franco Oils and Battleview Oils. Location is about 3 miles north of Battleview Oils' No. 1, which found one of the largest gas flows in Alberta. Test will spud this month. Last May, Franco Oils entered into an agreement with the Battleview company to carry out certain geological work on the structure and drill one test in return for a purchase contract for gas and a stock consideration. A seismograph survey made earlier indicated a very extensive structure.

Lease Reservations Continued

Announcement has been made by the Alberta government that due to the unsettled conditions resulting from the war, concessions are being granted to those who held lands for geological examination within the province. On payment of 1 cent per acre per month, reservations held for geological examination that were in good standing on December 15, 1939, and that otherwise would have terminated prior to March 31, 1940, will be extended to that date.

British Columbia Test

It is expected that No. 1 test to be drilled for the British Columbia provincial government in the Peace River area in the northern part of the province will be started in the spring and completed before the end of the year.

(Continued on Page 83)

Market Record of Active Oil Stocks

Compiled by Carl H. Pforzheimer & Co., 25 Broad Street, New York City, Member New York Stock Exchange and New York Curb Exchange

New York Stock Exchange

1939-1940 High	1939-1940 Low	Week ended Jan. 27 High	Week ended Jan. 27 Low	Week ended Jan. 27 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1939	Com. sh. earn. 1938	Com. sh. earn. 1937	1939 High	1939 Low	1938 High	1938 Low
74½	50	54	53⅝	54	Amerada Corp.	788,675	N.P.	50cQ	1-31-40	$2.00	$2.07	$3.04	74½	50	78	55
24⅞	18⅛	21¾	21	21	Atlantic Refining	2,663,999	$25	25cQ	12-15-39	1.00	1.40	3.51	24¾	18⅛	27⅝	17¾
21½	10¼	14⅞	14¼	14¾	Barber Asphalt Co.	390,223	$10	25c	11-17-39	.25	—.85	1.91	21	10¼	23¾	12⅛
19½	11⅛	12⅜	12⅛	12⅜	Barnsdall Oil Co.	2,250,344	$5	15c	3-9-40	.90	1.26	.85	19½	11⅛	21⅜	10⅛
9⅜	6½	7⅜	7⅛	7⅜	Consolidated Oil Corp.	13,751,846	N.P.	20cQ	2-15-40	.80	.55	1.48	9⅞	6½	10⅝	7
31½	19⅞	24⅝	23¼	24½	Continental Oil of Delaware	4,682,581	$5	25cQ	3-25-40	1.00	1.10	2.98	31½	19⅞	35⅜	21¼
9⅜	4½	6	5⅜	5⅞	Houston Oil	1,098,618	$25	....	10-17-30	....	.83	.94	9⅜	4½	9⅜	5
20¼	10	13	12¼	13	Lion Oil Refining	435,815	N.P.	25cQ	12-23-39	1.00	2.09	2.17	18⅛	10	25⅛	15⅝
18	11⅛	14⅜	14	14	Mid-Continent Petroleum	1,857,912	$10	35c	12-1-39	.60	.56	2.86	18	11⅛	22⅝	12¼
14⅞	8⅜	10	9⅝	9⅝	Mission Corporation	1,379,245	$10	40c	12-15-39	.65	1.04	1.31	14⅞	8⅜	17⅜	10⅝
15½	5⅝	9½	8½	9¼	National Supply	1,155,517	$10	....	12-22-37	....	—.79	4.90	15½	5⅝	23	12½
10½	6	7⅛	6⅜	7	Ohio Oil Co.	6,563,377	N.P.	20c	12-15-38	....	.25	1.30	10½	6	14⅞	8⅞
11⅞	7	8	7½	7¾	Pacific Western Oil	1,000,000	N.P.	40c	12-19-39	.40	1.22	1.39	11⅞	7	15⅞	10¼
8¾	5	7	7	7	Pan American Pet. & Trans.	4,702,945	$5	....	12-31-37	....	.08	1.18	8¾	5	9¼	6¼
46½	31¼	40⅝	39⅝	40⅜	Phillips Petroleum	4,449,052	N.P.	50cQ	12-1-39	2.00	2.03	5.42	46½	31¼	44⅝	27½
24	17⅛	20⅞	20⅝	20⅜	Plymouth Oil Co.	1,006,200	$5	35cQ‡	12-31-39	$1.40	2.59	2.85	24	17⅛	25⅜	15
11⅝	6⅛	8⅜	8½	8⅜	Pure Oil Co.	3,982,031	N.P.	25c	12-20-39	.25	.38	2.15	11⅝	6⅛	13½	8¼
10¼	6⅝	7⅞	7¼	7⅜	Richfield Oil Corp.	4,010,000	N.P.	50c	12-18-39	.50	.51	.35	10¼	6⅝	9⅞	5
24⅜	15½	19	18⅜	19	Seaboard Oil of Delaware	1,244,383	N.P.	25cQ	12-15-39	1.00	1.52	1.97	24⅜	15½	27½	15½
17¼	9⅞	12	11½	11¾	Shell Union Oil	13,070,625	N.P.	25c	12-20-39	.50	.72	1.44	17¼	9⅞	18⅜	10
29½	15½	20¼	20	20	Skelly Oil	995,349	$15	25c	1-30-40	.75	2.27	6.07	29½	15½	34⅜	18½
15⅛	10¼	12⅛	11⅜	11⅞	Socony-Vacuum	31,206,071	$15	25cSA	9-15-39	.50	1.29	1.82	15⅛	10¼	16⅜	10⅜
33⅝	24¼	25⅝	25	25	Standard Oil of California	13,004,153	N.P.	25cQ	12-15-39	1.10	2.22	3.17	33⅝	24¼	34⅞	25⅛
30	22⅜	26⅞	26¼	26½	Standard Oil (Indiana)	15,272,020	$25	50c†	12-15-39	1.25	1.82	3.66	30	22⅜	35½	24⅜
53½	38	44⅞	44	44	Standard Oil of New Jersey	26,618,065	$25	75c¶	12-15-39	¶1.25	2.86	5.64	53½	38	58⅜	39¾
66	45¾	59¼	56¼	59¼	Sun Oil	2,316,484	N.P.	25cQ	12-15-39	1.00	1.07	3.86	66	45¾	65¼	45
3⅝	1¾	2⅛	2⅛	2⅛	Superior Oil Corp.	1,388,979	$1	10c	12-28-38	....	.24	.32	3⅝	1¾	4¼	1¾
50¾	32½	44¼	42⅞	43⅛	Texas Corp.	10,876,882	$25	50cQ	1-2-40	2.00	2.13	5.02	50¾	32½	49⅝	32⅝
5¾	3¼	3⅝	3½	3⅝	Texas Gulf Producing Co.	888,146	N.P.	10c	12-15-39	.20	.86	.68	5¾	3¼	5⅞	2⅝
11⅜	7	8	7⅞	8	Texas Pacific Coal & Oil	888,236	$10	10c	12-1-39	.40	1.16	1.11	11⅜	7	12½	7
14¼	9½	10⅝	10¼	10⅜	Tide Water Associated	6,375,253	$10	15c	12-1-39	.80	1.28	2.08	14¼	9½	15⅜	10⅛
19⅜	15⅛	16½	16⅛	16½	Union Oil Co. of California	4,666,270	$25	25c	11-10-39	1.05	1.47	2.58	19⅜	15⅛	22½	17⅛
24½	20⅛	24½	23½	24	Union Tank Car Co.	1,177,381	N.P.	40c†	12-1-39	1.30	1.16	1.70	24¼	20⅛	23½	20
4¼	2⅜	3½	3¼	3½	Wilcox Oil & Gas	487,568	$5	10c	2-15-40	....	.52	.24	4¼	2⅜	3½	1⅝

†Includes extras. ‡Also 2 per cent in stock. §Also 4 per cent in stock. ¶Also 2½ per cent in stock. ¶Also 1½ per cent in stock. —Deficit.

New York Curb Exchange

1939-1940 High	1939-1940 Low	Week ended Jan. 27 High	Week ended Jan. 27 Low	Week ended Jan. 27 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1939	Com. sh. earn. 1938	Com. sh. earn. 1937	1939 High	1939 Low	1938 High	1938 Low
11¾	5½	6⅞	6⅝	6⅝	American Republics Corp.	1,308,049	$10	10c	7-11-38	....	—$0.22	$0.27	11¾	5½	11¾	5
7¼	2½	3	2⅞	2⅞	Bridgeport Machine Co.	270,000	N.P.	$1.25	12-30-37	....	—.14	1.90	7¼	2½	10¼	4⅞
34⅞	26½	34⅞	33	34½	Buckeye Pipe Line Co.	200,000	$50	$1	3-15-40	$2.50	2.36	4.02	34¾	26½	39	22½
130	108⅝	..	..	..	Chesebrough Mfg. Co.	120,000	$25	$1.50Q†	12-18-39	6.00	5.32	6.73	130	108⅝	128	97
9¼	4¼	4⅝	4½	4½	Cities Service (new)	3,704,067	$10	....	6-1-32	....	.23	1.02	9¼	4¼	11	5⅛
2¼	½	1⅝	1¼	1¼	Cosden Petroleum	462,551	$1	....	.....	....	....	.19	2¼	½	2⅜	⅞
28	16¾	21¼	20½	20⅝	Creole Petroleum	6,975,383	$5	50cSA†	12-15-39	1.00	1.64	1.61	28	16¾	27½	17½
7⅛	3⅝	..	..	..	Darby Petroleum	351,390	$5	25cSA	1-15-39	.25	....	1.36	7⅛	3⅝	10¼	5½
2⅝	1½	..	..	..	Derby Oil & Refining	263,162	N.P.	....	.....	....	—.91	1.34	2⅝	1½	3½	1½
23	15⅛	..	..	..	Eureka Pipe Line	50,000	$50	50c	11-1-39	2.00	—.37	—.12	23	15⅛	31	16
45⅛	29¼	36½	35⅝	36½	Gulf Oil Corp.	9,076,202	$25	25cQ	12-15-39	1.00	1.43	3.51	45⅛	29¼	46⅞	33
71	52½	63	61	61	Humble Oil & Refining	8,987,840	N.P.	62½c	12-16-39	2.00	3.98	5.22	71	52½	72⅝	56
17	11⅜	12⅜	11⅞	12	Imperial Oil of Canada	26,965,078	N.P.	37½c†	12-1-39	1.00	.96	.98	17	11⅜	19½	14⅛
7¼	5½	6¼	6	6	Indiana Pipe Line	300,000	$10	20c	11-15-39	.50	.47	1.03	7¼	5½	9⅜	6
27½	17	17⅞	17⅝	17⅜	International Petroleum	14,324,088	N.P.	75c	12-1-39	1.75	1.98	....	27½	17	31¼	21
3¾	2⅛	2¼	2¼	2¼	Kirby Petroleum Co.	500,000	$1	10c	4-15-38	....	.14	.17	3¾	2⅛	5	2⅛
10½	7¼	10	9⅝	9¾	Lone Star Gas	5,553,747	N.P.	30c	12-22-39	.70	.88	1.14	10½	7⅛	10⅜	6⅝
7¾	4	5½	5⅛	5½	Louisiana Land & Exp.	2,977,449	$1	5c	12-15-39	.35	.45	.58	7¾	4	9⅜	6½
17	14½	..	..	..	Margay Oil Corp.	149,943	N.P.	25cQ	1-10-40	1.00	2.28	3.26	17	14½	24	16
8¾	6⅝	7⅝	7½	7½	Midwest Oil Co.	998,474	$10	45c	12-15-39	.90	.93	1.14	8¾	6⅝	9¾	6⅝
6	4⅞	5¾	5⅝	5⅝	Mountain Producers	1,593,584	$10	30cSA	12-15-39	.60	.62	.76	6	4⅞	5¾	4½
14	11¼	13⅛	12½	12¾	National Fuel Gas	3,810,183	N.P.	25cQ	1-15-40	1.00	.84	.96	14	11¼	14⅝	11½
10	7¼	10	9¾	10	National Transit	509,000	$12.50	50c	12-15-39	.85	.88	1.19	9½	7¼	9¼	6½
1¾	1	..	..	..	New Mexico and Arizona	1,000,000	$1	1c	12-1-37	....	.02	.02	1⅜	1	2⅝	1½
6	4	6¼	5⅞	6¼	New York Transit	100,000	$5	25c	10-14-39	.40	.16	.49	6	4	4½	3½
7	4½	..	..	..	Northern Pipe Line	120,000	$10	15c	12-1-39	.30	.24	.78	7	4½	6	4
7⅝	4	4⅞	4⅝	4⅞	Pantepec Oil	2,857,000	$1	....	.....	....	....	....	7⅝	4	7⅜	3½
5	1¼	2⅜	2½	2⅝	Root Petroleum Co.	336,045	$1	25c	2-1-37	....	.17	—.17	5	1¼	4½	1⅝
3	1⅞	2	2	2	Ryan Consolidated	298,931	N.P.	....	.....	....	.29	.46	3	1⅞	4	2⅛
5⅝	3½	5⅝	5⅝	5½	Southern Pipe Line	100,000	$10	15cSA	9-1-39	.30	—.27	.85	4⅞	3½	5⅜	3¼
44	26¾	42⅛	41⅛	41⅛	South Penn Oil	1,000,000	$25	$1.87½Q†	12-15-39	3.00	1.44	4.64	40½	26¾	39	28¾
24	17	24	23⅞	24	Southwest Penna. Pipe Lines	35,000	$50	50cQ	12-26-39	2.00	—.41	.95	23	18	22¼	16½
20⅝	17¼	20⅝	20⅛	20⅜	Standard Oil of Kentucky	2,604,790	$10	55c†	12-15-39	1.30	1.45	1.60	20⅛	17¼	18⅜	15
32¾	17	29¼	29	29	Standard Oil of Ohio	753,740	$25	75c†	12-15-39	1.50	1.81	3.67	32¾	17	22⅜	16¼
2⅜	1⅜	2	1⅜	2	Sunray Oil	2,007,076	$1	5c	12-20-39	.10	.23	.42	2⅜	1⅜	3¼	2
4	2⅝	2¾	2⅝	2⅝	Texon Oil & Land	936,024	$2	10c	6-30-39	.10	.56	.51	4	2⅝	5¼	3½
6	2½	3⅛	3⅛	3⅛	Transwestern Oil Co.	750,000	$10	....	.....	....	—.12	.48	6	2½	7⅝	4¼
3⅜	1½	1⅞	1½	1⅝	United Gas Corp.	7,818,959	$1	....	.....	....	—.51	.25	3⅜	1½	5¼	2⅝

†Includes extras. —Deficit.

Personal Paragraphs

H. JOHN EASTMAN, president of Eastman Oil Well Survey Co., returned to his office in Dallas, Tex., last week after 5 weeks in California.

J. E. MOORHEAD, executive secretary, and HARRY M. RUGG, automotive engineer, Pennsylvania Grade Crude Oil Association, are on an extended tour of the West.

SAMUEL MESSER, vice president of Quaker State Oil & Refining Corp., has been reelected chairman of the Associated Petroleum Industries of Pennsylvania. W. S. ZEHRUNG, president of Pennzoil Co., replaced C. L. SUHR, Pennzoil board chairman, as a member of the executive committee.

E. S. BLEECKER, chief geologist, Gulf Oil Corp., New York producing division, sailed January 26 en route to Venezuela.

ROGER SANFORD, of Continental Oil Co., with offices in Houston, Tex., is spending a vacation in California.

O. B. HOPKINS, chief geologist, International Petroleum Co., Toronto, Canada, left New York last week for South America.

J. W. SELBY, chief scout for Shell Oil Co., Inc., Houston, Tex., visited the company's offices in the West Texas district the past week.

C. C. SPICER, president of Republic Petroleum Co. with offices in Los Angeles, Calif., has resigned as president of Los Angeles Lumber Products Co., holding company for Los Angeles Shipbuilding & Drydock Co.

H. L. McQUISTION has joined the Hawkeye Oil Co., recently organized in Tulsa, as production superintendent, with offices in Winfield, Kans. He formerly was with Phillips Petroleum Co. at Oklahoma City, Okla., and later was conservation officer at Cushing.

K. H. SCHILLING and G. D. THOMAS, geologists with Shell Oil Co., Inc., received 15-year service buttons, and BILL WASHBURN, ROY STEVENS, and N. C. HOOVER, scouts, all of Shreveport, La., received 10-year buttons at a recent company banquet held in Houston, Tex.

A. E. BOOTH, of M. D. Booth & Co., Bradford, Pa., has been appointed a member of the production advisory committee of the Pennsylvania Grade Crude Oil Association.

EMIL MONSOUR, formerly with the geological department of Sun Oil Co. in its Dallas, Tex., office, has been made district geologist for the company's Florida operations. He has been stationed at Tallahassee.

JAKE BRANDT, scout with Texas Co., Shreveport, La., is chairman of the committee on arrangements for the 1940 convention of the National Oil Scouts and Land Men's Association to be held in Little Rock, Ark., in May.

J. H. JOHNSON, scout with Texas Co., Shreveport, La., has been assigned to the East Texas territory.

J. C. TIPPETT, of Tippett Drilling Co., Shreveport, La., is recovering from an automobile accident at Highland Sanitarium, Shreveport.

H. W. STRALEY, III, and a group of advanced students of the department of geology of Baylor University, Waco, Tex., recently spent a week end studying the geology of the Arbuckle Mountains in the vicinity of Ardmore, Okla.

MAURICE BROWNFIELD, oil operator of Snyder, Tex., who was interested in the discovery well of the Sharon field in Scurry County, has been named president of a new oil association organized in that city recently. No name has as yet been selected for the group, which will seek membership in the Permian basin association.

HARRY M. SMITH, formerly of McKinney, Tex., has been made district scout for Magnolia Petroleum Co. for the East Permian basin district, offices being at Colorado City. Smith succeeds JOHN BRANNON, who has returned to Bridgeport, W. Va. Brannon became scout last November to succeed EARL CYPERT when the latter was transferred to Ohio.

E. A. ECKARDT, vice president of Gulf Research Corp., left last week on a 12-day cruise to Caribbean ports.

WALTER B. PYRON, vice president of Gulf Oil Corp., Houston, Tex., has been appointed chairman of the Houston Chamber of Commerce aviation committee for the second term.

JOHN J. LARKIN, JR., of the Sinclair Prairie Oil Co. geological staff, has been transferred from the Tulsa office to Wichita and is assigned to special work in Kansas.

F. O. AKIN, J. W. BIGGAR and DONALD AKIN of Corning, Iowa, and P. C. FLETCHER, Des Moines, all officials of the Hawkeye Petroleum Co., visited in Houston, Tex., recently on a tour of company properties in East and Southeast Texas.

HOWARD KEGLEY, of Los Angeles, Calif., has been elected president of the Western Mineralogical Exposition, a sponsored organization of the Los Angeles Engineers Club, and it is the intention to resume the club's activities in the petroleum industry.

R. W. HANNA has resigned as a director and president of Pacific Public Service Co. due to ill health, and J. H. TUTTLE, formerly vice president, has been elected to succeed him. R. K. DAVIES has been elected vice president and a vacancy on the board of directors has been filled by B. W. LETCHER. All officers of the company are officers of Standard Oil Co. which controls Pacific Public Service Co.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

Dana H. Kelsey joins the Prairie Oil & Gas Co.'s land department with headquarters in Tulsa. Mr. Kelsey succeeds J. L. Havice, who goes to Independence as the Prairie's assistant treasurer.

Benedum & Trees, of Pittsburgh, Pa., buys the Atlas Oil Co.'s holdings in the Caddo, Red River and De Soto pools in North Louisiana. The Atlas company was one of the Potter Palmer interests.

Joseph S. Sidwell, manager of the Penn-Mex Fuel Co., has returned to Tampico from a trip to Pittsburgh.

Prairie Oil & Gas Co. has sold all its pipe-line system to the Prairie Pipe Line Co., but continues as an oil producer and purchaser.

20 YEARS AGO

Thomas A. O'Donnell, president of the American Petroleum Institute, addresses a meeting of producers in Bradford, Pa., where he spent a part of his boyhood and helped to keep the family pot boiling by selling newspapers.

Pennsylvania Grade crude is raised to $5.25 per barrel.

Miss Rosella Flanagan, Tulsa oil news writer, bid $1,500 for a lease at the Osage auction sale of leases. An eastern oil man raised the bid, but the chivalrous Oklahomans howled him down and Colonel Walters, the auctioneer, sensing the situation, bowed and said, "sold to the lady."

10 YEARS AGO

Benedum & Trees Oil Co. pay $3,000,000 for W. E. Cook's 10,000-acre block in the Zwolle field in North Louisiana, $1,000,000 in cash and the remainder out of a quarter of the oil produced.

Indian Territory Illuminating Oil Co. buys the Foster Oil Co.'s interests in the Oklahoma City field now said to have a potential production of 95,000 bbl. per day.

W. A. GOFORTH, president of the Oklahoma Stripper Well Association, was a San Antonio, Tex., business visitor in the past week.

L. M. GOLDSMITH, chief engineer for Atlantic Refining Co., has been inspecting company properties in Texas.

JOHN M. RUSSELL of Sarawak Oilfields, Ltd., Miri, Sarawak, via Singapore, is at present on a tour of the oil fields in this country.

C. V. WHITE, chief civil engineer for Pure Oil Co., at its Fort Worth, Tex., offices, is being transferred to the company's Saginaw, Mich., offices.

WARREN SMITH, vice president, Pantepec Oil Co. of Venezuela, sailed aboard the Santa Paula January 26 for Venezuela. He was accompanied by Mrs. Smith and Miss F. O. Smith.

G. H. BLANKENSHIP, independent oil operator of Centralia, Ill., underwent a tonsillectomy in a Tulsa hospital January 29. He has been in Tulsa having dental work done for the past 2 weeks.

JOHN DOERING, geologist with Southwood Oil Co., addressed members of the Mississippi Geological Society at the organization's fourth regular meeting in Jackson, on the subject, "The Recent Trend Through the Miocene Formations in Mississippi."

O. C. BAILEY, chairman of the Arkansas Oil and Gas Commission, and A. M. CROWELL, commission director, will accompany GOV. CARL E. BAILEY to Washington next week to attend the hearings of the Cole committee. BOB BAILEY, lieutenant governor, will serve as governor during the governor's absence. None of the three Baileys is related.

Two Mules and a Plan

R. T. Herndon, vice president of the Texas Co. of California, who recently was made national sales executive, got his first job under the Texaco emblem back in 1915 in Brownsville, Tex., in the sales department as agent. Brownsville was a one-man station in those days, and the young man's principal job was driving a pair of gray mules, attached to a stake wagon. But it was noted that when a difference of opinion arose between him and the mules his prevailed. And he was looking ahead. He had a plan.

R. T. HERNDON

When the United States entered the World War young Herndon joined an officers' training camp and spent a year oversea as a lieutenant in the 315th Trench Mortar Battery. After the war he reentered Texaco service as a salesman in Ardmore, Okla. Soon he was a special representative in Tulsa. In a little while he was a district manager, first in El Paso, Tex., then in Denver, Colo. Next was an assignment to New York as superintendent of service stations. After that came transfer to Boston, Mass., as district manager, then back to New York as assistant manager of sales. In May 1929, Mr. Herndon was shifted to the Texas Co. of California as vice president and manager of Pacific Coast sales. In his new post his office is in New York.

Mr. Herndon was born 45 years ago in Houston, Tex. He received his education there and in a private school in San Antonio, Tex., where the family resided later. He married Alice Darling, of Chelsea, Vt., and they have two children.

L. E. DELCUZE, assistant to the vice president of Gulf Oil Corp., Houston, Tex., was elected president of the River Oaks Country Club.

HERBERT C. W. JOHNSTON, director, and VINCENT ILLING, vice president of Trinidad Leaseholds, Ltd., sailed from New York en route to Curacao.

N. C. McGOWEN, president of Union Producing Co., Shreveport, La., was in Jackson, Miss., last week conferring with officials regarding operations in the Tinsley field.

F. E. WARTERFIELD, chief engineer for the Oklahoma Pipe Line Co., has returned to the Tulsa offices of the company after spending 3 weeks in New York on business.

R. E. CALVERT, president of the Houston Independent Petroleum Marketers Association, was named chairman of the newly formed executive committee of the association.

C. E. FRENCH, industrial relations councillor of Trinidad Leaseholds, Ltd., sailed from New York last week en route to the British West Indies.

S. A. GIRAUD, director of the Humble Oil & Refining Co., at Houston, Tex., has been named on the American Petroleum Institute Division of Refining Committee which will promote vocational training for refinery employes.

JOHN McFADYEN, vice president of Ohio Oil Co., was taken suddenly ill while supervising control work on a gas blowout of the company in the El Segundo field, California, but reports from the Good Samaritan Hospital in Los Angeles indicated he is well on the road to recovery and expects to leave the hospital within a day or two.

Shifts: F. L. LIVELY, production superintendent Humble Oil & Refining Co., from Genoa, Tex., to North Crowley, La.; JOHN A. PETERSON, engineer Atlantic Refining Co., from Ozona, Tex., to Rankin, Tex.; G. F. POE, superintendent Ohio Oil Co., from Lovell, Wyo., to Casper, Wyo.; CLAY TYLER, superintendent Phillips Petroleum Co., from Princeton, Ind., to Hays, Kans.; VALERY P. DALE, engineer Foster Wheeler Corp., from West Philadelphia, Pa., to New York; FRANZ ROTH, engineer Moore & George, Ltd., from Whyteleafe, Surrey, England, to Nynashamn, Sweden; H. DEWILDE, Asiatic Petroleum Co., Ltd., from The Hague, Holland, to Middlesex, England; E. L. BIRMINGHAM, engineer Margay Oil Corp., from Houston, Tex., to Jackson, Miss.; JOSEPH A. HEALY, manager land and lease department, Belcher Production Co., from Miami, Fla., to Coral Gables, Fla.; F. A. ALLEN, drilling contractor, from Flora, Ill., to Oklahoma City, Okla.; EUGENE W. GILL, engineer Phillips Petroleum Co., from Okmulgee, Okla., to Duncan, Okla.; W. B. WILSON, Trinity Drilling Co., from Eunice, N. M., to Denver City, Tex.; LEO W. KONZ, engineer Carter Oil Co., from Mount Vernon, Ind., to Harrisburg, Ill.; MARK H. O'CONNELL, geologist Cities Service Oil Co., from Amite, La., to Crowley, La.; E. P. HORNSBY, Dyer Drilling Co., from Merryville, La., to DeRidder, La.; CHARLES B. JOHNSON, JR., engineer Barnsdall Oil Co., from Thibodaux, La., to New York; W. MINCHEN, manager Harmin Corp., from Houston, Tex., to LaPorte, Tex.; J. A. MOORE, engineer Visco Products, Inc., from Lake Charles, La., to Fresno, Calif.; R. R. CREEKMORE, engineer Oklahoma Pipe Line Co., from Wewoka, Okla., to Oklahoma City, Okla.; S. D. RODGERS, from Medan, Sumatra, Netherland East Indies, to San Antonio, Tex.

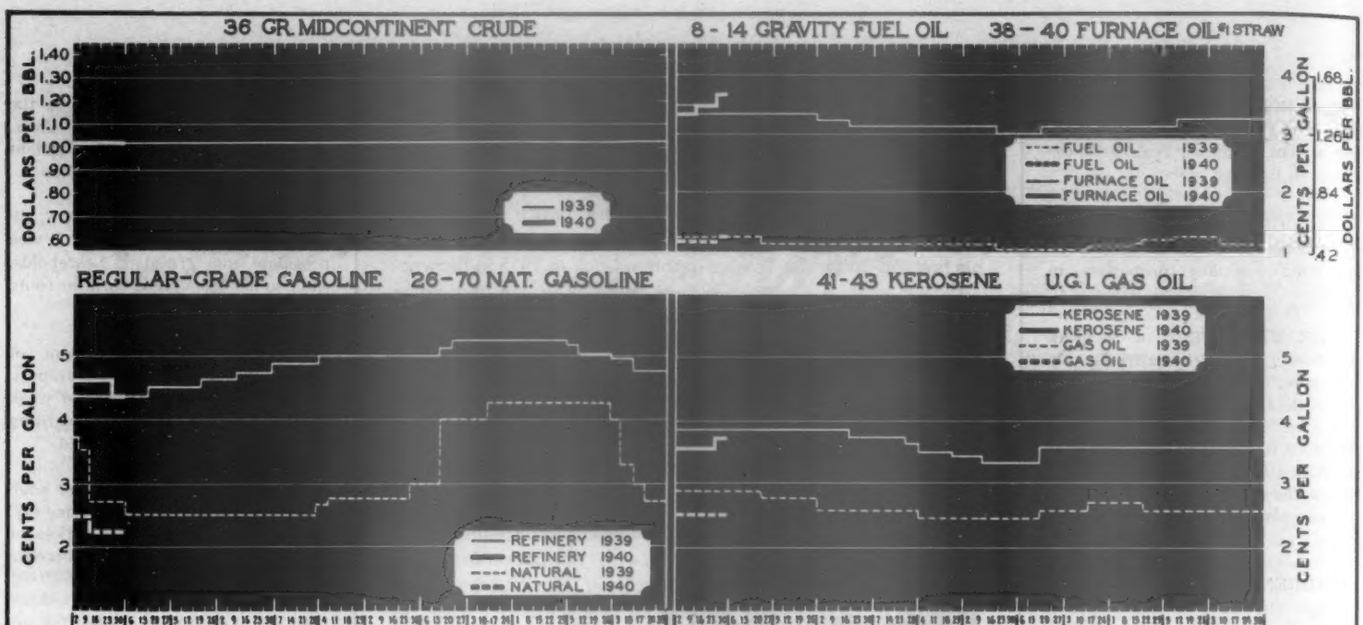
A. C. HORNADY, district geologist for Phillips Petroleum Co., Wichita Falls, Tex., discussed the geological significance of 1939 developments in Archer County at the monthly meeting of the North Texas Geological Society held in Wichita Falls last week. H. C. FOUNTAIN, district geologist for Magnolia Petroleum Co., discussed the like phase for Wichita County while E. M. PURCELL, geologist with John A. Kay of Wichita Falls, covered developments in Baylor County.

CHARLES L. SUHR, chairman of the board of Pennzoil Co., is vacationing at his ranch at Phoenix, Ariz.

DR. SYLVAIN PIRSON is chairman of the ninth annual petroleum and natural gas conference which will be held by the School of Mineral Industries at Pennsylvania State College April 26 and 27.

LYNN K. LEE, formerly division geologist for Pure Oil Co. at Olney, Tex., has been named chief geologist for the Texas division of the company and will have headquarters in the company's offices in Fort Worth. He succeeds FRANK PAULSEN, who resigned to become a consulting geologist.

PAUL WEAVER, chief geophysicist for the Gulf Oil Corp., was the principal speaker before the Petroleum Engineering Club of Texas A. & M. College at its regular meeting in the past week. He spoke on the subject, "Effect of Connate Water in Oil Production." The meeting was held in College Station, Tex.



Representative Mid-Continent Quotations on Crude Oil and Refined Products, Basis Oklahoma (Group 3)

Natural Gasoline Collapses in Group 3 Market; Fuel Oils in Urgent Demand

By T. F. SMILEY

COLLAPSE of the natural-gasoline market, increasing tightness of light and residual fuels, and further recession of refinery gasoline marked a week that offered little to raise the spirits of Group 3 refiners. Such encouragement as lay in the smashing demand for fuel oils was pretty well offset by the fact that in meeting this demand refiners were sending gasoline stocks to fantastic heights.

Whatever of resistance the naturals may still have possessed since they began their decline last December vanished in the past week, when the 26-70 grade dropped to 2 cents in Oklahoma and 1¾ cent in Texas.

Turning to Stabilization

With prices at these levels — "absurd" is the way they are characterized in the trade—manufacturers are considering stabilization more seriously as a way out of a cheerless situation. With the 26-70 grade selling at 2 cents, that material, stabilized to 12 lb. vapor pressure, would bring 3 cents. The 12-lb. natural goes into the market in direct competition with third-grade refinery gasoline, and it has a higher octane rating than the ordinary third-grade product. Even in the present low state of refinery gasoline the 12-lb. natural would have an advantage from a sales standpoint. It is pointed out that at current prices natural gasoline costs less than crude oil. Some in the trade believed the naturals would straighten out at their current levels.

Notwithstanding the demoralized market, there was said to be excellent demand for natural gasoline at those plants that have favorable freight rates to refineries in Oklahoma. Many plants, however, have such high freight rates that they are compelled to seek northern outlets. This condition, manufacturers say, is one of the principal causes of the weakness in the naturals.

With almost no demand from Gulf Coast refiners, natural-gasoline manufacturers in Texas are more hard pressed than those in Oklahoma; and so long as the Texas market is weak it will create weakness in the Oklahoma market.

Freezing weather spreading over almost all parts of the country, including the Southwest, has created a sharp rise in the demand for heating oils, and prices moved up a notch in the past week. There has been speculation as to how long big stocks stored in the Minneapolis and St. Paul area last year would act as a market deterrent. There was evidence that these accumulations had shrunk substantially as the result of heavy withdrawals in recent weeks. Oklahoma refiners said they were receiving orders regularly now from that region.

Heavy industrial fuels also were in active demand, with offerings decreasing. At various points it was reported that plants which ordinarily operated on natural gas had been obliged to turn to burning oils because of shortage of the regular fuel.

Gasoline in Deeper Trouble

Gasoline was in deeper trouble. Wishful thinking had led refiners to declare that with the regular grade at 4⅝ cents (and concessions easy to get) prices had reached bottom. But by way of showing that almost anything is possible in the disordered market now prevailing, quotations went an eighth cent to a quarter cent lower. Some sales managers asserted that the reductions were of little real significance, that they were not so much an indication of fresh weakness as they were a recognition of price levels that already were in effect. Here and there a refiner said his business revealed no falling off in point of either volume or prices.

Wax, which had been a star performer for months, was softening. The lubricants seemed to be holding their ground, in spite of weakness in the eastern market.

Refined Oil Market Barometer

Strength of fuel oils continued to rise, with scarcity of some grades in prospect. Kerosene up in sympathy with distillates. Gasoline drifting to lower levels as runs to stills maintain high rate and nation's stocks go to new highs. Natural gasoline at lowest prices recorded since June 1938, but believed to be leveling off. Lubricants and wax softening. Heavy fuels stronger.

MID-CONTINENT. Gasoline weak. Fuel oils buoyant. Naturals weak. Lubes and wax sag.

EAST COAST. All grades of fuel oil tight. Gasoline inactive. Kerosene strong.

GULF COAST. Gasoline depressed. Fuel and burning oils vigorous. Lubricants firm.

PENNSYLVANIA. Gasoline unsteady. Lubricating oils pointing downward. Wax receding.

CALIFORNIA. Gasoline continues soft. Fuel and diesel oils weak. No price changes.

CHICAGO. Fuel-oil demand more urgent. Gasoline soft. Heavy industrial fuel firm.

Fuel Oils Are Continuing to Set Market Pattern on East Coast

By H. STANLEY NORMAN

NEW YORK, Jan. 30.—Fuel oils of all grades continued last week to set the market pattern along the North Atlantic Coast. Demand set new records in the southern part of the East Coast area where full effects of a midwinter storm were felt by areas normally enjoying relatively moderate temperatures.

All grades of fuel oil were tight in the New York market and Gulf Coast refiners reported their stocks at low levels. Northeastern distributors reported increasing difficulty in locating replacement stocks on the Gulf despite firm offers meeting present quotations in all respects.

Motor fuel is relatively steady in New York and other northeastern Atlantic terminals. Consumption is admittedly much below summer levels, but remains considerably higher than at comparable 1939 periods.

Latest reports further reflect a satisfactory motor-fuel consumption in this section of the country. Taxable motor-fuel sales in New York State in November totaled 143,226,962 gal., an increase of 15,158,270 gal., or more than 10 per cent, over 1938. In the first 11 months of 1939, taxable sales of motor fuel totaled 1,630,578,454 gal., against 1,547,817,185 gal. in the 1938 period, a gain of 5.3 per cent.

Kerosene continues strong. A local competitive condition brought a sharp cut in the Standard Oil Co. of New Jersey tank-wagon quotation at Charleston, S. C., where the company's price was dropped 4.1 cents per gallon to a new figure of 6.5 cents per gallon on January 17. Kerosene tank-wagon prices were generally revised by Standard of New Jersey in Virginia. A reduction of 1.4 cents per gallon was made at Danville; the Richmond posting was raised 0.3 of a cent and that at Roanoke was boosted 0.5 of a cent per gallon.

Spot tank-car gasoline prices in the New York and New Jersey market were unchanged at a range of 6.5 to 7.7 cents per gallon. The high side of the motor-fuel market range applies to 72-74 octane material offered by a limited number of refiners meeting the recently elevated knock specifications. Distributors in this area explain that continued high tanker rates and relative scarcity of boats prevent the local tank-car gasoline market from reflecting the full softening on the Gulf Coast.

Refiners on the Gulf Coast are taking advantage of the apparently insatiable demand for light fuel to force gasoline movement in cases where stocks are becoming burdensome. One New York distributor reported last week that he was compelled to accept a part cargo of motor fuel in order to obtain needed No. 2 burning oil from a Gulf Coast supplier.

Indications were that motor-fuel prices on the Gulf have softened ⅛ cent per gallon during the past week or 10 days. Most suppliers indicated that firm offers of 5¾ cents per gallon would bring out ample stocks of 72-74 octane motor fuel, but a few in relatively strong position continue to ask 6⅛ to 6¼ cents for this material. The inferior octane gasolines on the Gulf Coast, ranging down to 60, are available for as little as 5 to 5⅛ cents per gallon.

Elevate Market Sights

The bullish fuel-oil market in the northeastern section of the country and dwindling stocks caused Gulf Coast refiners to elevate their market sights slightly last week. Some are asking up to 4¼ cents per gallon for No. 2 fuel, although limited stocks can be located by shopping at the old general price of 4 cents.

Bunker C fuel oil is generally held to the cargo trade at 98 cents to $1.05 per barrel. Several of the East Coast market stragglers are now quoting the full scope of the $1.50 market at New York, Boston, Philadelphia, and nearby ports. One or two suppliers are offering Bunker C grade fuel to restricted customers at $1.35 but business at this figure is insufficient to be considered representative.

Cargo buyers of light fuels on the Gulf Coast generally report they are being asked 4 to 4⅛ cents and the impression is gaining ground that the primary market will move up another point to 4⅛ to 4¼ cents in the near future.

The New York tank-car price of 5.1 to 5.6 cents per gallon for Nos. 2 and 3 fuel oil is well maintained with a bulk of business transacted at 5.4 cents.

Western Pennsylvania refiners made another small retrenchment from record lubricating-oil prices last week. Bright stocks were offered at prices 1 to 2 cents below the preceding weeks' levels and the wax quotations have been softening to a point where white scale is available in some directions as low as 5.5 cents per pound.

Gulf Coast Markets

HOUSTON, Tex., Jan. 30.—Little change was evident in Gulf Coast refinery markets the past week. Gasoline supplies outdistanced demand with sellers willing to accept almost any bid within reason for material on firm orders, which were scarce.

Demand for fuel and burning oils showed no abatement. With sellers still unable to supply requirements of all buyers, prices remained strong. Sellers do not expect any early easing up of the situation, which has continued tight since early last fall. The tightness was reflected in slight advances in quotations of Bunker C fuel in cargoes, which now are held from 97 cents to $1.05. This product in ships' bunkers was quoted at 90 cents, with some sellers getting 95 cents.

Kerosene showed a little easier tone, although this product still was not overplentiful. Sellers generally were asking around 4¼ cents. Those holding for higher prices were getting few calls.

Coastal lubricating stocks continued to hold firmly. Although sellers are able to fill the existing demand, there is no surplus of material, so there is little occasion for price concessions.

Crude was showing an increasing tendency toward easiness. While the situation was not such as to indicate a market weakness, those in need of crude are finding no difficulty in filling their requirements.

A. P. I. Weekly Refinery Statistics

Week Ended January 27, 1940

	Capacity reporting (per cent)	Daily crude runs (bbl.)	Total gasoline stocks (bbl.)	Gas oil and distillate stocks (bbl.)	Residual fuel-oil stocks (bbl.)
East Coast	100.0	554,000	18,760,000	7,488,000	7,575,000
Appalachian	87.3	122,000	3,963,000	405,000	522,000
Ind., Ill., and Ky.	90.7	473,000	13,580,000	3,254,000	2,502,000
Okla., Kans., and Mo.	81.6	255,000	7,615,000	1,232,000	2,134,000
Inland Texas	50.3	108,000	1,898,000	306,000	1,636,000
Texas Gulf	90.0	861,000	14,074,000	3,568,000	5,349,000
Louisiana Gulf	97.8	141,000	2,924,000	774,000	921,000
N. Louisiana and Ark.	55.0	41,000	621,000	253,000	433,000
Rocky Mountains	54.2	50,000	1,411,000	157,000	455,000
California	90.0	499,000	16,948,000	9,230,000	79,453,000
Total reported	86.4	3,104,000	81,794,000	26,667,000	100,980,000
Est. unreported	.....	366,000	6,120,000	740,000	2,035,000
*Est. total	.....	3,470,000	87,914,000	27,407,000	103,015,000
*Est. total previous wk.	.....	3,510,000	85,880,000	28,888,000	104,582,000
*Jan. 28, 1939	.....	3,235,000	78,210,000	32,933,000	116,450,000

*Bureau of Mines.

Stocks of Crude Oil in the United States

(BUREAU OF MINES ESTIMATE)

Week ended January 20, 1939	237,571,000 barrels
Week ended January 13, 1939	238,249,000 barrels
Week ended January 21, 1938	271,110,000 barrels

Figures do not include stocks of heavy, unrefinable California crude.

Anglo-Canadian Operations

A report covering operations of Anglo-Canadian Oil Co. of Calgary shows it completed five producing wells in Turner Valley in which it has complete ownership subject to royalty. In addition, it has a majority interest in Anglo-Canadian's No. 8 and Argus Royalties' No. 1, and a production interest in a number of associated companies. It is drilling Anglo-Phillips' No. 1 in North Turner Valley, receiving full return of first drilling costs out of production with a 72½ per cent interest thereafter. Anglo-Canadian's No. 7, in South Turner Valley, is now in the lime; and location has been made for No. 9 in Section 7-19-2w5. The Anglo-Canadian company operates the Central refinery at Brandon, Man.

Retail Oil Markets

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of January 30, 1940

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county, and city taxes. The gasoline is the regular or standard grade. In most areas lower grades and a premium grade also are available.

Standard Oil Co. (Indiana)

	Gasoline: Tank wag.	Gasoline: Dir. tax	Gasoline: Incl. tax	Kero. tank wag.
Chicago, Ill.	15.1	13.1	4.0	10.0
Decatur	15.1	12.1	4.0	8.5
Joliet	15.1	13.6	4.0	10.0
Peoria	15.1	12.7	4.0	10.0
Quincy	14.9	13.4	4.0	9.8
Davenport, Ia.	15.1	13.6	4.0	‡10.0
Des Moines	14.9	12.4	4.0	‡9.8
Mason City	15.3	13.8	4.0	‡10.2
Duluth, Minn.	16.9	15.4	5.0	10.8
Mankato	16.5	15.0	5.0	10.4
Minneapolis	16.5	14.5	5.0	10.4
LaCrosse, Wis.	16.5	15.0	5.0	10.4
Green Bay	16.9	15.4	5.0	10.0
Milwaukee	16.3	14.8	5.0	10.2
Detroit, Mich.	13.6	12.1	4.0	7.6
Grand Rapids	13.9	11.7	4.0	9.7
Saginaw	14.8	13.3	4.0	9.3
Evansville, Ind.	16.6	15.1	5.0	†10.5
Indianapolis	16.8	14.3	5.0	†10.0
South Bend	16.8	15.3	5.0	†10.0
Fargo, N. D.	17.7	16.2	5.0	11.6
Huron, S. D.	17.0	15.5	5.0	10.9
Kans. City, Mo.*	14.4	12.9	4.0	8.0
St. Louis*	14.7	13.2	4.0	8.0
St. Joseph	14.4	12.0	4.0	7.9
Wichita, Kans.	13.3	11.1	4.0	7.0

***State tax 2 cents, 1-cent city tax and 1-cent federal tax. †Does not include 4-cent state tax. ‡Does not include 3-cent state tax.**

Exclusive of state general sales taxes.

Discounts to commercial consumers: On purchases per month off tank-wagon prices: 1,000 gal. or more, 1.5 cents off; minimum delivery 25 gal.

Stanolex Fuel Oil in Chicago

Effective December 12, 1939, f.o.b. Chicago tank-wagon prices: Standard heater oil, 1-99 gal., 9 cents; 100-149 gal., 8 cents; 150 gal. and over, 7.5 cents. Stanolex fuel oil No. 1, 1-149 gal., 8.25 cents; 150-399 gal., 7.25 cents; 400 gal. and over, 6.75 cents. Stanolex furnace oil, 1-149 gal., 8.25 cents; 150-399 gal., 7.25 cents; 400 gal. and over, 6.75 cents. Stanolex Grade A, 1-399 gal., 5.5 cents; 400 gal. and over, 4.5 cents. Stanolex Grade B, 1-799 gal., 5.25 cents; 800 gal. and over, 4.25 cents. Stanolex Grade C, 1-999 gal., 4.5 cents; 1,000 gal. and over, 3.5 cents.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline: Cons'r tank wag.	Gasoline: Dividend dlr.	Gasoline: Incl. tax	Kero. tank wag.
Ohio points	15.5	14.5	5.0	*13.0

***Includes state tax of 1 cent.**

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline: Cons'r tank car	Gasoline: Dir. tank wag.	Gasoline: Incl. tax	Kero. tank wag.
Atl'tic City, N. J.	11.6	12.7	4.0	8.1
Newark	11.6	12.7	4.0	8.1
Annapolis, Md.	13.35	14.35	5.0	9.5
Baltimore	12.75	13.75	5.0	7.5
Cumberland	14.15	16.15	5.0	10.0
Wash'gton, D. C.	11.00	12.0	3.0	9.5
Danville, Va.	14.95	17.45	6.0	11.5
Norfolk	13.75	16.25	6.0	11.0
Petersburg	14.05	16.55	6.0	11.7
Richmond	14.05	16.55	6.0	11.0
Roanoke	15.25	17.75	6.0	11.5
Charles'n, W. Va.	14.55	17.05	6.0	12.6
Parkersburg	13.85	15.35	6.0	11.2
Wheeling	14.85	16.75	6.0	12.2
Charlotte, N. C.	16.90	18.40	7.0	11.8
Hickory	17.45	18.95	7.0	12.3
Mt. Airy	17.30	18.80	7.0	12.2
Raleigh	16.65	18.15	7.0	11.5
Salisbury	16.95	18.45	7.0	11.9
Charleston, S. C.	14.75	17.25	7.0	6.5
Columbia	15.60	18.10	7.0	11.5
Spartanburg	16.30	18.80	7.0	12.2

Price basis to Essolene undivided dealers: Dealer tank-wagon price less 0.5 cent per gallon. Price basis to commercial consumers, effective March 8, 1937, in Maryland, District of Columbia, and in Arlington and Fairfax counties in Virginia; and March 12 in New Jersey: To contract accounts purchasing at least one full compartment at time by hose connection, on yearly purchases: From 2,500 to 100,000 gal., consumer tank-wagon price at time and place of delivery; 100,000 gal. per year, consumer tank-car price plus .5 cent per gallon. Consumer tank-wagon price generally will be equivalent to dealer tank-wagon price less .5 cent per gallon.

Effective January 16, 1939, in North Carolina the commercial consumer schedule became as follows: Single deliveries of 50 gal. or more, consumer tank-wagon price. Single deliveries of less than 50 gal., 4 cents per gallon over consumer tank-wagon price. Generally the posted consumer tank-wagon price will be equivalent to the dealer price, less .5 cent per gallon. The above policy also applies in South Carolina, effective January 23, 1939.

Discounts for kerosene, 1 cent off tank-wagon price for 25 gal. or more under contract (contract not necessary in Baltimore), except no discount in New Jersey.

Southern District

STANDARD OIL CO. (KENTUCKY)

	Gasoline: Cons'r tank wag.	Gasoline: Net dlr.	Gasoline: Incl. tax	Kero. tank wag.
Atlanta, Ga.	17.0	17.0	7.0	8.0
Augusta	17.5	17.5	7.0	8.0
Macon	16.5	16.5	7.0	10.5
Savannah	16.5	16.5	7.0	9.0
Birmingham, Ala.	18.5	18.5	8.0	9.0
Mobline	18.5	18.5	9.0	8.0
Montgomery	19.5	19.5	9.0	11.0
Jackson, Miss.	16.0	16.0	7.0	10.0
Vicksburg	16.5	16.5	7.0	9.5
Jacksonville, Fla.	17.0	17.0	8.0	8.0
Miami	17.0	17.0	8.0	8.0
Pensacola	18.5	18.5	9.0	8.5
*Tampa	21.0	18.0	8.0	8.0
Lexington	16.5	16.5	6.0	10.0
Covington	15.0	15.0	6.0	9.5
Louisville	15.5	15.5	6.0	9.0
Paducah	15.5	15.5	6.0	9.0

Price basis to tank-wagon consumers, effective January 4, 1937, 3 cents per gallon below tank-wagon price.

Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon; Pensacola, Fla., has a city gasoline tax of 1 cent. All are included in the table.

*Temporary discounts to tank-wagon consumers in Tampa 3 cents per gallon below consumer tank-wagon price on Crown gasoline.

Pennsylvania and Delaware

ATLANTIC REFINING CO.

	Gasoline: Cons'r tank car	Gasoline: Dir. tank wag.	Gasoline: Incl. tax	Kero. tank wag.
Philadelphia, Pa.	12.5	14.0	5.0	10.0
Pittsburgh	13.0	14.5	5.0	10.5
Allentown	13.0	14.5	5.0	10.5
Erie	13.0	14.5	5.0	10.0
Scranton*	12.5	15.0	5.0	10.5
Altoona	13.0	15.0	5.0	10.5
Dover, Del.	...	13.5	5.0	10.5
Wilmington	...	14.0	5.0	9.75

Price basis to undivided dealers, dealer tank-wagon price less .5 cent per gallon.

Discount on kerosene, 2 cents per gallon off tank-wagon price on tank-wagon deliveries of 25 gal. or more at one time.

*Voluntary discount of 1 cent allowed to dealers only.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline: Tank truck	Gasoline: Serv. sta.	Gasoline: Incl. tax	Kero. tank wag.
San Francisco	17.5	18.5	4.0	11.5
Los Angeles	17.0	18.0	4.0	10.0
Fresno, Calif.	18.5	19.5	4.0	12.5
Phoenix, Ariz.	20.0	21.0	6.0	*17.5
Reno, Nev.	20.5	21.5	5.0	13.5
Portland, Ore.	20.0	21.0	6.0	13.5
Seattle, Wash.	20.0	21.0	6.0	†13.75
Spokane	21.5	22.5	6.0	†16.75
Tacoma	20.0	21.0	6.0	†13.75

*Includes 5-cent state tax. †Includes 0.25-cent state tax.

Discounts to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents. To commercial consumers: On tank-wagon price; on single deliveries of 40 gal. and over, advance quantity discount extended at time of delivery, 3 cents. Service-station schedule applies on single deliveries less than 40 gal. On kerosene in tank-car, transport-truck and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank wagon.

March 18, 1939, split dealer discount was canceled.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline: Cons'r tank car	Gasoline: Dir. tank wag.	Gasoline: Incl. tax	Kero. tank wag.
Albany	12.6	14.2	5.0	8.30
*Met. N. Y.: Manhat, Bronx, Queens, Br'klyn., Staten Island	12.7	13.7	5.0	8.50
Buffalo	13.1	14.5	5.0	7.60
Rochester	13.3	15.0	5.0	8.40
Syracuse	13.2	14.5	5.0	8.80
Portland, Me.	12.6	14.4	5.0	8.50
Manchester, N. H.	13.3	15.3	5.0	8.90
Burlington, Vt.	13.1	15.0	5.0	8.70
Boston, Mass.	11.5	13.0	4.0	8.50
Worcester	12.1	13.5	4.0	8.40
Hartford, Conn.	11.9	13.3	4.0	8.40
New Haven	11.8	12.8	4.0	7.50
Providence, R. I.	11.5	13.3	4.0	8.50

***Does not include 2 per cent city sales tax, which is calculated on basis of net retail price exclusive of state and federal taxes. Metropolitan New York prices are undivided dealer prices; others are split dealer.**

Effective February 15, 1939, the company changed its commercial consumer policy in New York and New England points for tank-wagon delivery to the following: Annual purchases 10,000 gal. and under, tank-car price plus 2 cents per gallon; annual purchases 10,000 gal. up to 50,000 gal., tank-car price plus 1.5 cents per gallon; annual purchases 50,000 to 200,000 gal., tank-car price plus 1 cent per gallon; annual purchases 200,000 gal. and over, tank-car price plus ¼ cent per gallon. Private consumers pay undivided dealer price, plus 2 cents per gallon. Private consumers receiving full compartment deliveries of at least 200 gal. receive a discount of ½ cent per gallon.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline: Tank wag.	Gasoline: Dir. tax	Gasoline: Incl. tax	Kero. tank wag.
Denver, Colo.	15.5	...	5.0	11.5
Grand Junction	17.5	...	5.0	15.0
Pueblo	15.0	...	5.0	9.0
Casper, Wyo.	17.5	...	5.0	11.5
Cheyenne	15.5	...	5.0	13.0
Billings, Mont.	18.5	...	6.0	13.0
Butte	20.0	...	6.0	15.5
Great Falls	19.5	...	6.0	15.5
Helena	20.5	...	6.0	15.5
Salt Lake, Utah	15.5	15.5	5.0	16.0
Boise, Idaho	21.1	21.1	6.0	18.0
Twin Falls	21.1	21.1	6.0	18.0
Albu'que, N. M.	17.0	17.0	6.5	10.0
Roswell	16.0	16.0	6.5	8.0
Santa Fe	17.5	17.5	6.5	10.0

***Includes city tax of 0.5 cent. †Includes state tax of 1 mill.**

Tank wagon represents price to consumers. Dealer represents price to dealers. If no dealer price is quoted, the tank-wagon price applies to all classes of trade.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline: Cons'r tank car	Gasoline: Dir. tank wag.	Gasoline: Incl. tax	Kero. tank wag.
New Orleans, La.	15.25	17.75	8.0	†11.0
Baton Rouge	15.25	17.75	8.0	‡10.5
Alexandria	15.25	17.75	8.0	‡12.5
Lafayette	15.00	18.00	8.0	‡11.0
Lake Charles	15.25	17.75	8.0	‡12.5
Shreveport	14.00	16.50	8.0	‡11.0
Knoxville, Tenn.	18.00	20.50	8.0	13.0
Memphis	16.00	18.50	8.0	11.0
Chattanooga	17.50	20.00	8.0	13.0
Nashville	17.00	17.50	8.0	11.0
Bristol	18.25	17.75	8.0	13.0

Essolene at dealer price less 0.5 cent per gallon to undivided dealers.

†Includes 1-cent parish tax and 1-cent state tax. ‡Includes 1-cent state tax.

Price basis to commercial consumers: Effective May 15, 1937, deliveries of 50 gal. or more in one territory take posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gal. at one time pay posted consumer tank-wagon price plus 4 cents per gallon. Generally, the posted consumer tank-wagon price will be equivalent to the dealer price less 0.5 cent per gallon. Kerosene prices include 1-cent state tax.

Effective February 24, 1939, the company reestablished in New Orleans the commercial consumer policy on motor fuel effective in the rest of the state.

Effective December 12, 1938, the company revised its commercial consumer policy on motor fuel in New Orleans, as follows: Single deliveries of less than 50 gal., consumer tank car plus 2 cents per gallon 50 to 199 gal., consumer tank car plus 1 cent per gallon; 200 gal. and over, consumer tank car plus 0.5 cent per gallon.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline: Tank wag.	Gasoline: Dir. tax	Gasoline: Incl. tax	Kero. tank wag.
Omaha	16.5	13.5	6.0	9 8
McCook	16.5	13.9	6.0	9.0
Norfolk	16.5	14.4	6.0	9.5
North Platte	17.8	14.9	6.0	10.0
Scottsbluff	18.5	15.5	6.0	11.4

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective January 1, 1935.

Oklahoma and Arkansas

CONTINENTAL OIL CO.

	Gasoline: Tank wag.	Gasoline: Dlr	Gasoline: Incl. tax	Kero. tank wag.
Texarkana, Ark.	13.0	...	5.0	7.0
Fort Smith	14.5	...	5.0	7.5
Little Rock	17.25	...	7.5	8.0
Muskogee, Okla.	13.0	12.0	5.0	7.0
Oklahoma City	11.0	...	5.0	6.5
Tulsa	11.0	...	5.0	7.0

Tank wagon represents price to consumers. Dealer represents price to dealers. If no dealer price is quoted, the tank-wagon price applies to all classes of trade.

Texas

	Gasoline: Tank wag.	Gasoline: Dlr. tax	Gasoline: Incl. tax	Kero. tank wag.
Dallas, Tex.	12.0	16.0	5.0	7.0
Fort Worth	12.0	16.0	5.0	8.0
Houston	14.0	18.0	5.0	8.0
San Antonio	14.0	18.0	5.0	8.0

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank wagon*
Oleum spirits	16.2
V.M.&P. naphtha	16.5
Cleaners' naphtha	15.5
Stanisol	15.5

***Prices include 3-cent Illinois tax but not 1-cent federal tax nor 2 per cent retail occupational tax.**

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150-gal. lots if covered by contract.

Tank-Wagon Changes

Standard Oil Co. of New Jersey January 17 reduced tank-wagon kerosene 4.1 cents in Charleston, S. C.; January 24, reduced tank-wagon kerosene 1.4 cents in Danville; advanced tank-wagon kerosene 0.3 cent in Richmond, and 0.5 cent in Roanoke.

Standard Oil Co. (Kentucky) January 9 reduced tank-wagon kerosene 2 cents in Augusta; January 17, reduced tank-wagon kerosene 0.5 cent in Tampa; January 23, advanced tank-wagon kerosene 1 cent in Miami; January 26, reduced consumer tank-wagon gasoline 4 cents and net dealer gasoline 1 cent in Atlanta; January 26, reduced consumer tank-wagon gasoline 3 cents in Augusta, Macon, Savannah, Birmingham, Montgomery, Vicksburg, Jacksonville, Miami, Pensacola, Lexington, Covington, Louisville, and Paducah; January 26, advanced net dealer gasoline 2 cents in Mobile, reduced net dealer gasoline 0.5 cent in Jackson.

Standard Oil Co. of Ohio January 27 reduced consumer tank-wagon and divided dealer gasoline 0.5 cent throughout Ohio.

Prices of Refined Products

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of January 30, 1940

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents a gallon on lubricating oils.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
62 octane and below	.03⅝	.03¾
63-66 octane	.03¾	.04
67-69 octane	.04¼	.04¼
70-72 octane (regular)	.04⅝	.04½
60-62 400 grades:		
62 octane and below	.03⅝	.03¾
63-66 octane	.03¾	.04
67-69 octane	.04¼	.04¼
70-72 octane (regular)	.04⅝	.04½
68-70 360	.04⅝	.04¾

NORTH TEXAS—

U. S. Motor grades:		
62 octane and below	.03⅝	.03¾
63-66 octane	.03¾	.04
67-69 octane	.04¼	.04¼
70-72 octane (regular)	.04⅝	.04½
60-62 400	.03⅝	.03⅞

NORTH LOUISIANA (Ark. and N. La. delivery)—

U. S. Motor grades:		
62 octane and below	.04¼	.04½
63-66 octane	.04½	.04⅝
67-69 octane	no quotations	
70-72 octane (regular)	.05	.05¼

ARKANSAS (Ark. and N. La. del.)—

U. S. Motor grades:		
62 octane and below		.04⅜
67-69 octane	no quotations	
70-72 octane (regular)		.05⅛

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
62 octane and below	.03¾	.04
63-66 octane	.04	.04¼
67-69 octane	.04¼	.04½
70-72 octane (regular)	.04½	.04¾
60-62 400 grades:		
62 octane and below	.03¾	.04
63-66 octane	.04	.04¼
67-69 octane	.04¼	.04½
70-72 octane (regular)	.04½	.04¾
68-70 360	.04⅝	.04⅞

PENNSYLVANIA (inland refineries)—

58-60 U. S. Motor	.04½	.04¾
65 octane	.06⅛	.06⅝
72-74 octane (regular)	.06⅝	.06¾

CALIFORNIA (domestic movement)—

54-58 U. S. Motor	.06	.07
58-60 400, 65 oct. and higher	.07	.08

EAST COAST (domestic)—

U. S. Motor, 65 and above:		
*New York (Bayonne)	.06½	.06¾
Philadelphia	.06½	.06¾
Boston	.06¾	.07⅛
Baltimore	.06½	.06¾
Charleston, S. C.	.06⅞	.07

*All grades of gasoline ⅛ to ¼ cent less for barge shipments. New York harbor prices are for New York and New England delivery. Prices for New Jersey delivery ¼ cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
65-67 octane	.04⅝	.04¾
68-70 octane	.04¾	.05
70-72 octane (leaded)	.05	.05¼

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70		.02
Grade 18-55	.02⅝	.02⅝

NORTH TEXAS—

Grade 26-70		.01⅜
Grade 18-55		.02⅛

CALIFORNIA—

75-85 375-390	.05¾	.06

NORTH LOUISIANA (Ark. and N. La. delivery)—

Grade 26-70		.02⅛

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 l.b.p., 110-flash, 540-550 e.p.	.03¾	.03⅞
41-43 gr., 300-320 l.b.p., 110-125 flash, 500-520 e.p.	.03¾	.03⅞
46-48 gr., 210-230 l.b.p., 480-max., e.p.	.04	.04⅛

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

41-43	.03¾	.03⅞
42-44	.03⅞	.04

NORTH TEXAS—

41-43	.03¾	.03⅞

NORTH LOUISIANA (Ark. and N. La. delivery)—

41-43	.03⅛	.03⅜

ARKANSAS (Ark. and N. La. del.)—

41-43		.03⅜

PENNSYLVANIA (inland refineries)—

45	.04¾	.05¼
46	.04⅞	.05⅜
47	.05	.05½

CHICAGO (Based on Group 3)—

41-43	.03¾	.03⅞
42-44	.03⅞	.04

CALIFORNIA (Pac. Coast market)—

38-43 high burning test	.04½	.05⅜

NEW YORK (Bayonne, N. J.)—

41-43	.0560	.06

***GULF COAST (domestic)—**

41-43		.04½

*Barge price ⅛ cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

Range oil	.03¾	.04
No. 1 prime white, 38-42	.03¾	.03⅞
No. 1 straw, 38-40	.03⅝	.03¾
No. 2 straw, 32-36	.03½	.03⅝
No. 2 dark, 32-36	.03⅝	.03½
No. 3 zero to 10, 28-32	.03⅜	.03½
No. 3, 15 and above, 28-32	.02¾	.03

NORTH TEXAS—

No. 1 prime white, 38-42	.03¾	.03⅞
No. 1 straw, 38-40	.03⅝	.03¾

NORTH LOUISIANA (Ark. and N. La. delivery)—

No. 2, 32-36	.03	.03⅛

ARKANSAS (Ark. and N. La. del.)—

No. 2 32-36		.03⅜

CHICAGO (Based on Group 3)—

Range oil	.03¾	.03⅞
No. 1 prime white, 38-40	.03¾	.03⅞
No. 1 straw, 38-40	.03⅝	.03¾
No. 2 straw, 32-36	.03½	.03⅝
No. 2 dark, 32-36	.03¾	.03½
No. 3, zero to 15, 28-32	.03⅜	.03½
No. 3, 15 and above, 28-32	.02¾	.03

NEW YORK (Bayonne, N. J.)—

*No. 1		.0560
*No. 2	.0510	.0560
*No. 4	.0510	.0560

*Barge deliveries ⅛ to ¼ cent under above tank-car price.

Gas Oil and Fuel Oil

(Gas oil per gal., fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil, under 35	.02⅝	.02¾
No. 5, low pour point, 18-22	.70	.77½
No. 6, 15 and above, 8-14	.50	.55

NORTH TEXAS—

U.G.I. gas oil, under 35	.02⅝	.02¾
No. 5, low pour point, 18-22	.75	.80
No. 6, 15 and above, 8-14	.50	.55

NORTH LOUISIANA (Ark. and N. La. delivery)—

10-14 fuel oil, industrial	.70	.75

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.02⅝	.02⅞
No. 5, low pour point, 18-22	.75	.80
No. 5, 15 and above, 18-22	.60	.70
No. 6, low pour point, 10-16	.60	.70
No. 6, 15 and above, 10-16	.50	.55

PENNSYLVANIA (inland refineries)—

36-40	.04	.04½

CALIFORNIA—

Los Angeles:

30-40 gas oil, per bbl.	1.15	1.25
24 plus diesel, per bbl.	1.15	1.25
24 plus diesel (bunkers)	1.20	1.35
12-16 (bunkers at tidewater)	.70	.75
10-16 (cargo lots)	.70	.75
12-17 (tank cars)	.60	.75
10-17 (high sulfur)	.55	.65

San Joaquin Valley:

10-18 (tank cars)	.55	.70
24 plus diesel, per bbl.	1.15	1.25

San Francisco:

24 plus diesel, per bbl.	1.35	1.40
24 plus diesel (bunkers)	1.40	1.50
10-16 (bunkers)	.75	.80

GULF COAST—

No. 2 fuel		.04⅛
43-47 diesel		.04
48-52 diesel		.04⅛
53-57 diesel		.04½
58 and above diesel		.04⅝
Bunker C (bulk cargoes)	.97	1.05
Bunker C (bunkers)	.90	.95

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil	.05	.0520
28-30 diesel (lighterage 6¼c per bbl.)	2.10	2.20
28-30 diesel (tank cars)	.05	.052
Bunker C (to ocean-going ships in N. Y. harbor)		1.50
Industrial fuel (tank cars)	.035	.0375

Lighterage charge 5c bbl. additional.

Bright and Steam Refined

OKLAHOMA (Group 3)—

190-200 D, 15-25		.28
150-160 D, 0-10		.25
150-160 D, 15-25		.24
150-160 E, 15-25		.24
100-110 D, 0-10		.24
Steam refined:		
600 dark green (untreated)		.08

PENNSYLVANIA—

Bright Stocks (Pennsylvania Grade No. 8 color, 140-150 at 210, 545-550 flash):		
10 pour point	.30½	.33
15 pour point	.29½	.32
25 pour point	.28	.30
Steam refined:		
600	.17	.18
650	.19	.20
600 flash	.19½	.20½
630 flash	.22	.24

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

0-10 pour point:		
150-3		.13
180-3		.14
180-4		.13½
200-3		.14½
200-4		.14
250-3		.16
250-4		.15½
280-3		.17
280-4		.16½
300-3½		.17½
400-3½		.18½
100-2½ paraffin oil		.07½
15-25 pour point:		
200-3		.14
200-4		.13½
250-3		.15½
250-4		.15
280-3		.16½
280-4		.16

GULF COAST—

Pale oils:		
200-3	.07¼	.07½
300-3	.07⅝	.08
500-3½	.08½	.09
750-3½	.09	.09½
1,200-3½	.09¾	.10
2,000-4		.10¼
Red oils:		
200-5-6	.07	.07¼
300-5-6	.07½	.07⅝
500-5-6	.08¼	.08⅝
750	.08¾	.09¼
1,200-5-6	.09⅝	.09⅝

CALIFORNIA (moving to dom. market)—

Pale oils:		
100-2½-3	.07¼	.08
200-2½-3	.07¼	.08
300-2½-3	.07¼	.08
400-3-4	.07¼	.08
450-3-4	.07¼	.08
550-3-4	.09	.11
600-3-4	.09	.11
Red oils:		
200-4-5	.07¼	.08
300-5-6	.07¼	.08
350-5-6	.09¼	.11½
400-5-6	.09¼	.11½
450-5-6	.09¼	.11½
500-5-6	.09¼	.11½
600-5-6½	.09¼	.11½
700-6½ plus	.09¼	.11½
750-6½ plus	.09¼	.11½
900-6½ plus	.09¼	.11⅝

PENNSYLVANIA—

150 vis. at 70° F., 3 color, 400-405 flash:		
Zero pour point	.30½	.31
10 pour point	.29½	.30
15 pour point	.28½	.29
25 pour point	.27	.29
200 vis. at 70° F., 3 color:		
Zero pour point	.32½	.33
10 pour point	.31½	.32
15 pour point	.30½	.31
25 pour point	.29	.31

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (A.m.p.) w.c. scale	.06	.06½

PENNSYLVANIA (inland refineries)—

122-124 (A.m.p.) w.c. scale	.05½	.06
124-126 (A.m.p.) w.c. scale	.05½	.06⅛

NEW YORK—

Wax in bags fully refined:		
125-127 (A.m.p.) wax	.0600	.0655
128-130 (A.m.p.) wax	.0615	.0675
130-132 (A.m.p.) wax	.0635	.0700
133-135 (A.m.p.) wax	.0665	.0730
135-137 (A.m.p.) wax	.0690	.0755
Crude scale:		
124-126 (A.m.p.) w.s.	.0575	.0600
124-126 (A.m.p.) y.s.	.0575	.0625
Petrolatum in barrels, carload lots:		
Dark green	.03500	.03625
Amber	.03625	.0400
Extra amber	.03875	.0425
Lily white	.06625	.0700
Snow white	.07625	.0800
Cream	.05625	.0600

Export Prices

GASOLINE

GULF COAST—

U. S. Motor	.05¼	.05⅜
60-62 400	.05¼	.06¼
61-63 390	.05¼	.06⅛
64-66 375	.05⅝	.06¼

LOS ANGELES—

U. S. Motor grades:		
60-65 octane	.05½	.05⅝
65-69 octane	.05⅝	.06¼
Above 69 octane	.06¼	.06½

KEROSENE

GULF COAST—

41-43 water white	.04¼	.04½

LOS ANGELES—

41-43 water white	.05	.05¼

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (l.c.s.) in bbl.)—

Cylinder stocks:		
600 S.R. unfiltered	.23	.26
650 S.R. unfiltered	.25	.28½
600 flash, S.R.	.26	.30
630 flash, S.R.	.31	.34
Bright stock:		
Light, 25 pour point	.38½	.40

NEUTRAL OIL

200-3 color	.38	.39
150-3 color	.36½	.40

PARAFFIN WAX

NEW YORK (prices per pound)—

133-125 A.m.p.	.0640	.0650
125-127 A.m.p.	.0700	.0750
128-130 A.m.p.	.0750	.0775
133-135 A.m.p.	.0825	.0850
135-137 A.m.p.	.0875	.0900
Crude scale:		
124-126 w.s.	.0625	.0675
124-126 y.s.	.0625	.0675

Crude Oil Prices

Oklahoma, Kansas, North Central and East Central Texas

East Texas (Oct. 11, 1938)* $1.10
Sinclair Prairie Oil Marketing Co. October 2, 1939. DeSoto Pipe Line October 2, 1939. Cities Service Co. October 5, 1939. Shell Oil, Inc., October 5, 1939.
Van, Tex. (Oct. 11, 1938)* $0.93
Talco, Tex. (Oct. 2, 1939)* ..... .65
Rodessa, Tex. .....
See North Louisiana gravity schedule
Cass and Panola counties, Texas .....
See note below
Altus and Tipton† ..... See note below
Cayuga, Tex. (Oct. 2, 1939) $0.78
Clay Creek, Tex. ..... .85
Long Lake, Tex. (Jan. 20, 1940) .. 1.08

*Humble Oil & Refining Co. †Gulf Refining Co. Pure Oil Co.'s Van price, 93 cents, effective Oct. 13, 1938.

Cass and Panola counties, Texas, effective October 12, 1938, by Magnolia Petroleum Co., same as North Louisiana prices in Column 5 in gravity schedule.

Altus and Tipton, Oklahoma, starting at below 25° at 71 cents, 2-cent spread to 40° and above at $1.03. Cayuga posted by Pan American Pipe Line Co. Clay Creek by Sun Oil Co. Long Lake by Sinclair Oil Marketing Co.

West Texas

See gravity table.
Fisher County, Texas (Apr. 1, 1939)
See note below
Pecos County (Oct. 11, 1938)* $0.78
Pecos shallow (Oct. 11, 1938)† ..... .65

*Shell Oil Co., Gulf Pipe Line Co. and Humble Oil & Refining Co. †Shell Oil Co.

Fisher County, Texas, by Shell Oil Co., Inc., below 25°, 68 cents; 25°, 70 cents, with 2-cent spread to 40° and over at $1.

North Louisiana and Arkansas

Shreveport, La. (Sept. 7, 1939) ... $1.05
See note below
Smackover, Ark. (Oct. 5, 1938)* ..... .73
Buckner, Magnolia, and Village, Ark. (Oct. 5, 1938)* ..... See note below
Schuler, Jones sand (Sept. 13, 1939) .79
Schuler, Reynolds sand (Sept. 13, 1939) ..... .91
Tullos and Urania ..... .89
Cotton Valley, La. (distillate) (Dec. 23, 1938)* 1.20
Cotton Valley (Holloway sand) Dec. 16, 1939) 1.00
Lisbon, La. (Apr. 29, 1939) .....
See note below
Atlanta, Ark. (Sept. 13, 1939) ..... .93
Magnolia, Ark. (Sept. 13, 1939) ..... .93
University, La. (Sept. 11, 1939) .....
.....See note below

*Smackover posted by Standard Oil Co. of Louisiana, Oct. 5, 1938; by Magnolia Petroleum Co., Oct. 12; by Gulf Refining Co., Oct. 13; McMillan Refining Co. and Cross Refining Co. met price. Tullos and Urania posted by Hunt Oil Co. and Arkansas Fuel Oil Co.

The above Schuler, Atlanta, and Magnolia, Arkansas, flat prices posted by Lion Oil Refining Co. Shreveport flat prices posted by Caddo Crude Oil Purchasing Co. and Atlas Oil Corp.

Buckner, Magnolia, and Village, Arkansas prices effective Sept. 13, 1939, by Standard Oil Co. of Louisiana, start at below 25° at 63 cents, with 2 cents added for each degree up to 40 and over at 95 cents.

Effective Sept. 7, 1939, Standard Oil Co. of Louisiana posted gravity prices in Shreveport field beginning at below 25°, 73 cents; 25-25.9°, 75 cents, with 2 cents added for each degree up to 40 and over at $1.05.

In the Lisbon, Louisiana, field, effective Sept. 14, 1939, Gulf Refining Co. and Caddo Crude Oil Purchasing Co. posted 27-27.9°, 66 cents, with 2 cents added for each degree up to 35 and over at 82 cents.

In the Baton Rouge (University) field, Louisiana, effective Sept. 11, 1939, Standard Oil Co. of Louisiana posted below 20° 79 cents, with 3 cents added for each degree upward to 26-26.9° at $1, and then 2 cents added for each degree up to 40 and over at $1.28.

Southwest Texas

Salt Creek, Darst Creek, Hilbig, Carroll, Clark and Zoboroski (Oct. 11, 1938)* $0.96
Pettus (Oct. 11, 1938)* 1.29
Flour Bluff (Dec. 3, 1938)* 1.23
Jim Wells County (Oct. 2, 1939)* . 1.23
Darst Creek (Oct. 12, 1938)† ..... .96
Darst Creek and Bruner (Oct. 13, 1938)‡ ..... .96
Luling (Oct. 12, 1938)† ..... .87
Lytton Springs (Oct. 12, 1938)† ..... .90
Mirando (Oct. 12, 1938)† .....
Government Wells (Oct. 13, 1938) ...
See note below

*Humble Oil & Refining Co. †Magnolia Petroleum Co. Pettus price adopted by Atlantic Crude Oil Purchasing Co. ‡Gulf Refining Co.

Government Wells posted by Sun Oil Co. starts at 20° at 77 cents, 3-cent spread to 24°-24.9° at 89 cents.

Gulf Coast

Sea Breeze, Willow Slough, and LaBelle, Tex. (Sept. 14, 1939)*** $1.10
Conroe, Tex. (Oct. 11, 1938)* 1.27
Black Bayou and White Castle, La. (Oct. 11, 1938)† .....See note below
Gibson, La. (Oct. 11, 1938)† $1.04
Garden Island, La. (Oct. 12, 1938)‡ 1.24
Lafitte, La. (Oct. 12, 1938)‡ 1.04
Cleveland, Tex. (Oct. 12, 1938)¶ ... 1.14
Schwab, Polk County (Feb. 20, 1939) 1.00
Hardin, Tex. (Sept. 14, 1939)* 1.10
Tepetate, La. (Oct. 11, 1938)§ 1.03
Villa Platte, La. (Oct. 11, 1938)§ 1.03
Abbeville, La. (Jan. 1, 1939)§ .....
See note below
Bosco, La. (Dec. 3, 1938)‖ $0.93
Creole, La. (Oct. 13, 1938)‖ ..... .96
Gueydan, Sweet Lake, and Louise, La. (Oct. 13, 1938)‖ .See note below
Vinton, Edgerly, Starks, Hackberry, Timbalier Bay, Quarantine Bay, and Grand Bay, La. (Oct. 2, 1939)**
Segno and Wing (Oct. 2, 1939)**
See note below
Livington (Oct. 11, 1938)† $1.10
Gibson, La. (Oct. 11, 1938)† 1.04
Evangeline, La. (July 7, 1939) ..... .98
Happytown, La. (Jan. 12, 1940)† .. 1.00

*Humble Oil & Refining Co. †Shell Oil Co., Inc. ‡Texas Co. §Continental Oil Co. ‖Pure Oil Co. ¶Magnolia Petroleum Co. **Gulf Refining Co. ***Sun Oil Co. Hardin prices by Humble and Sun companies.

Black Bayou, etc., starts at below 20° at 79 cents; 20°-20.9°, 81 cents; 21°-21.9°, 83 cents; then a 3-cent spread to 26°-26.9°, 96 cents; then a 2-cent spread to 40° and over at $1.14. Abbeville starts at below 36°, 92 cents, 2-cent spread to 40° and over at $1.02. Gueydan, etc., starts below 20°, 79 cents, 3-cent spread to 26°-26.9° at $1, and 2-cent spread to 40° and over at $1.28. Segno and Wing take Gulf Refining Co.'s Gulf Coast prices. Vinton, Edgerly, etc., schedule starts at below 20°, 86 cents, 2-cent spread to 34° and above at $1.16. Schwab posted by Shell Oil Co., Inc. Evangeline, La., posted by Standard Oil Co. of Louisiana.

Hackberry, East and West, effective

Crude Prices by Gravities

	Oklahoma and Kansas 1	Oklahoma and Kansas 2	Oklahoma and Kansas 3	North and Central Texas 4	Louisiana and Arkansas 5	East Central Texas 6	Gray County, Texas 7	Carson and Hutchinson Counties Texas 8	West Texas, and Lea County, N. M. 9	Raccoon, Satsuma, and Tomball, Texas 10	Gulf Coast 11	Anahuac, Dickinson, Texas 12	Refugio, Texas 13	Mirando-Duval, Beaumont-West Beaumont, Texas 14	Golden Meadows, Louisiana 15	Lockport, Iowa, Cameron Meadows, Louisiana 16	Bunkie and Eola, Louisiana 17	Artesia, Jackson, Maljamar, N. M. 18
Below 18	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	$.74	....	....
18-18.9	....	....	....	....	....	....	....	....	$.53	....	....	....	....	....	....	.76	....	....
19-19.9	....	....	....	....	....	....	....	....	.53	....	$.86	$.81	$.91	$.86	....	.78	....	....
20-20.9	$.70	....	$.60	....	....	....	....	....	.55	....	.88	.83	.93	.88	....	.80	....	....
21-21.9	.72	....	.63	....	....	....	....	....	.57	....	.90	.85	.95	.90	....	.82	....	....
22-22.9	.74	....	.66	....	....	....	....	....	.59	$.95	.92	.87	.97	.92	....	.85	....	....
23-23.9	.76	....	.69	....	....	$.78	....	....	.61	.97	.94	.89	.99	.94	....	.88	....	....
24-24.9	.78	....	.72	$.71	$.73	.80	....	....	.63	.99	.96	.91	1.01	.96	$.90	.91	....	....
Below 25	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	$.83	....
25-25.9	.80	$.58	.75	.73	.75	.82	....	....	.65	1.01	.98	.93	1.03	.98	.90	.94	.85	....
26-26.9	.82	.63	.78	.75	.77	.84	....	....	.67	1.03	1.00	.95	1.05	1.00	.90	.97	.87	....
27-27.9	.84	.68	.81	.77	.79	.86	....	....	.69	1.05	1.02	.97	1.07	1.02	.90	.99	.89	....
28-28.9	.86	.73	.84	.79	.81	.88	$.72	$.67	.71	1.07	1.04	.99	1.09	1.04	.90	1.01	.91	$.61
29-29.9	.88	.78	.87	.81	.83	.90	.74	.69	.73	1.09	1.06	1.01	1.11	1.06	.90	1.03	.93	.63
30-30.9	.90	.82	.90	.83	.85	.92	.76	.71	.75	1.11	1.08	1.03	1.13	1.08	.90	1.05	.95	.65
31-31.9	.92	.86	.92	.85	.87	.94	.78	.73	.77	1.13	1.10	1.05	1.15	1.10	.92	1.07	.97	.67
32-32.9	.94	.90	.94	.87	.89	.96	.80	.75	.79	1.15	1.12	1.07	1.17	1.12	.94	1.09	.99	.69
33-33.9	.96	.96	.96	.89	.91	.98	.82	.77	.81	1.17	1.14	1.09	1.19	1.14	.96	1.11	1.01	.71
34-34.9	.98	.98	.98	.91	.93	1.00	.84	.79	.83	1.19	1.16	1.11	1.21	1.16	.98	1.13	1.03	.73
35-35.9	1.00	1.00	1.00	.93	.95	1.02	.86	.81	.85	1.21	1.18	1.13	1.23	1.18	1.00	....	1.05	.75
36-36.9	1.02	1.02	1.02	.95	.97	1.04	.88	.83	.87	1.23	1.20	1.15	1.25	1.20	1.02	....	1.07	.77
37-37.9	1.04	1.04	1.04	.97	.99	1.06	.90	.85	.89	1.25	1.22	1.17	1.27	1.22	1.04	....	1.09	.79
38-38.9	1.06	1.06	1.06	.99	1.01	1.08	.92	.87	.91	1.27	1.24	1.19	1.29	1.24	1.06	....	1.11	.81
39-39.9	1.08	1.08	1.08	1.01	1.03	1.10	.94	.89	.93	1.29	1.26	1.21	1.31	1.26	1.08	....	1.13	.83
40 and over	1.10	1.10	1.10	1.03	1.05	1.12	.96	.91	.95	1.31	1.28	1.23	1.33	1.28	1.10	....	1.15	.85

Column 1—Effective October 17, 1938, by Standard Oil Co. of Indiana. By Gulf Refining Co., October 13, 1938. Carter Oil Co. schedule and prices same from 30° upward, but on lower gravities pays below 21° 60 cents, with 3 cents added for each degree up to and including 29-29.9°, effective October 13, 1938. Gulf Oil Corp. starts at below 25° 78 cents, October 13, 1938. Texas Co. schedule starts at 28-28.9° at 86 cents. Pure Oil Co. same as Standard of Indiana's schedule, effective October 14, 1938.

Column 2—Sinclair Prairie Oil Marketing Co. February 16, 1939.

Column 3—Magnolia Petroleum Co. effective October 12, 1938; Shell Petroleum Corp., October 22, 1938; Shell Oil Co., Inc., April 1, 1939.

Column 4—Effective December 3, 1938, by Humble Oil & Refining Co. in Central Texas. By Magnolia Petroleum Co. in East Central and in North and Central Texas, excepting that it starts at below 29° at 79 cents, effective December 3, 1938. Texas Co. in North and Central Texas, same as Magnolia's but effective October 12, 1938. Gulf Refining Co. same as Magnolia's, effective October 13, 1938. Sinclair Prairie Oil Marketing Co. same as Magnolia's, effective October 5, 1939. Stanolind Oil Purchasing Co., in Cooke and Montague counties, schedule starts at below 21°, 60 cents, with a 2-cent spread upward to 40° and over at $1, effective October 17, 1938.

Column 5—Standard Oil Co. of Louisiana, effective October 5, 1938. Met by Gulf Refining Co. October 13; met by Texas Co. October 12.

Column 6—Humble Oil & Refining Co., October 11, 1938.

Column 7—Humble Oil & Refining Co., Effective December 3, 1938. Sinclair Prairie Oil Marketing Co., October 11, 1938. Texas Co. quotes "Panhandle sweet crude," beginning with 34-34.9°, at 84 cents, with 2-cent spread to 40° and over at 96 cents, and "Panhandle sour crude," 79 cents for 34-34.9°, with a top of 91 cents for 40° and over, effective October 12. Magnolia Petroleum Co. met Humble prices throughout, effective December 3. Gulf Refining Co. quotes "Panhandle sweet crude" at below 29°, 72 cents with a 2-cent spread, and a top price of 96 cents for 40° and above, and "Panhandle sour crude" below 29°, 67 cents, with a top of 91 cents for 40° and above effective October 13. Phillips Petroleum Co. schedule for sweet crude in Gray, Carson, and Hutchinson counties, starts at below 29°, 72 cents, with a spread of 2 cents up to 96 cents for 40° and over, effective February 7, 1939.

Column 8—Humble Oil & Refining Co., effective December 3, 1938. Sinclair Prairie Oil Marketing Co., October 11, 1938. Texas Co. quotes "Panhandle sweet crude" at 34-34.9°, 84 cents, with a top of 96 cents for 40 gravity, and "Panhandle sour crude" at 34-34.9°, 79 cents, with a top of 91 cents for 40° and over, effective October 12. Gulf Refining Co. quotes "Panhandle sweet crude" at below 29°, 72 cents, with a top of 96 cents for 40° and over and "Panhandle sour crude" at below 29°, 67 cents, with a top of 91 cents for 40° and above, effective October 13. Phillips Petroleum Co. schedule for sour crude in Carson, Moore, and Hutchinson counties, starts at below 29° at 67 cents, with a spread of 2 cents up to 91 cents for 40° and over, effective February 7, 1939.

Column 9—Humble Oil & Refining Co., effective October 11, 1938. Texas Co. schedule starts at below 26°, 65 cents, and ends at 36° and over at 87 cents, effective October 12. Gulf Refining Co. starts at below 26° at 65 cents and ends at 40° and over at 95 cents, effective October 13. Magnolia Petroleum Co. schedule starts below 25°, 63 cents, and ends at 40° and above at 95 cents, effective October 12. Sinclair Prairie Oil Marketing Co. schedule same as that of Magnolia, effective October 11, but revised on March 24, 1939, to stop at 36° and over at 87 cents. Stanolind Oil Purchasing Co. schedule same as that of Humble, effective October 11. Stanolind Oil & Gas Co. (Winkler County) starts at below 26°, 65 cents, with a 2-cent spread, and a top of 95 cents for 40° and above, effective October 11, 1938. Effective September 1, 1939, Shell Oil Co., Inc., posted Yoakum County crude, starting at below 20°, 53 cents, with 2 cents added for each degree up to 36° and over at 87 cents.

Column 10—Humble Oil & Refining Co., effective October 11, 1938. Magnolia Petroleum Co., in Tomball, effective October 12.

Column 11—Effective October 2, 1939, by Humble Oil & Refining Co. in Texas Coast. By Sinclair Prairie Oil Marketing Co. in Texas Coast, October 3, 1939. By Texas Co. at $1.16 in Texas and Louisiana Coast, October 2, 1939, schedule stopping at 34° and over. By Sun Oil Co. in Texas and Louisiana Coast, October 2, 1939. By Gulf Refining Co. in Louisiana October 2, 1939, excepting that schedule stops at $1.16 for 34° and above. By Gulf Refining Co. in Texas, effective November 1, 1939.

Column 12—Effective by Humble Oil & Refining Co. October 2, 1939. By Sun Oil Co. in Anahuac, October 2, 1939. By Gulf Refining Co. in Anahuac, October 2, 1939. On November 1, 1939, Gulf Refining Co. applied these prices to Anahuac, Hull (new), Pierce Junction, Orange, Thompson (deep).

Column 13—Effective October 2, 1939, by Humble Oil Refining Co. and Continental Oil Co. By Texas Co. up to 28° and over at $1.09 October 2, 1939. Atlantic adopted Humble price schedule November 7, 1939, in Refugio and applied it also to Greta.

Column 14—Effective October 2 by Humble Oil & Refining Co. By Sun Oil Co. in Mirando alone, stopping at 24-24.9° at 96 cents. By Stanolind Oil & Gas Co. in West Beaumont, alone, October 2, 1939. Gulf Refining Co. in West Beaumont, October 2, 1939. By Magnolia Petroleum Co. in Beaumont, October 2, 1939. By Texas Co. in Duval and Mirando, stopping at 28-28.9° at $1.09. Continental Oil Co. in Mirando and Duval, October 2, 1939.

Column 15—Effective October 2, 1939, by Texas Co.

Column 16—Magnolia Petroleum Co., effective October 12, 1938.

Column 17—Standard Oil Co. of Louisiana, effective October 23, 1939.

Column 18—Continental Oil Co., effective October 11, 1938.

October 2, 1939, by Stanolind Oil & Gas Co. Below 20 gravity 86 cents, 2 cents added for each degree up to 34° and over at $1.16.

In the Bunkie and Eola pools in Louisiana, effective October 23, 1939, by Standard Oil Co. of Louisiana, below 25° 83 cents, 2 cents added for each degree up to 40° and over at $1.15.

Iowa, La., effective October 11, 1938, by Shell Petroleum Corp. and on April 1, 1939, by Shell Oil Co., Inc.: Below 18°, 75 cents; 18-18.9, 77 cents; 2-cent to 21-21.9 at 83 cents; then a 3-cent spread to 26-26.9 at 98 cents; then a 2-cent spread to 34° and above at $1.14.

Middle Western States

OHIO OIL CO.
(Effective June 8, 1939)

Illinois old fields	$0.95
Illinois basin	1.05
Princeton, Ind.	.95
Western Kentucky (June 9, 1939)†	.90
Birk City, Ky. (June 9, 1939)‖	.90
Corydon, Ky. (June 9, 1939)‖	.90
Greendale, Porter, Crystal and Wise, Mich. (Oct. 9, 1939)*‡	1.02
Buckeye, Bentley, Edenville, Beaverton, Mich. (Oct. 9, 1939)*	1.00
Freeman-Redding, Mich. (Oct. 9, 1939)‡	.97
Arenac, Mich. (Oct. 9, 1939)*	.82
West Branch, Mich. (Nov. 1, 1939)*	.85
Allegan-Kent (Oct. 10, 1939)	1.03
Bloomingdale and Columba, Mich.¶	1.03
Muskegon	1.00
Sherman and Freeman, Mich. (Oct. 9, 1939)‡	.97
Eastern Kentucky:	
Big Sandy River (June 9, 1939)†	$1.02
Kentucky River (June 9, 1939)†	1.10

*Simrall Corp. †Ashland Refining Co. ‡Pure Transportation Co.. ‖Imperial Refining Co. ¶Sohio Oil Co. Bloomingdale posted by Tri-Lakes Corp. Kent County by Naph-Sol Refining Co. Effective Sept. 13, 1939, Sohio Corp. posted 95 cents per barrel in Salem, Ill., pool, and on Oct. 10, 1939, posted 95 cents per barrel in the Griffin field in Gibson County, Indiana, and Wabash County, Illinois, for crude produced from sand and 90 cents for crude produced from limestone.

Rocky Mountain States

Dry Creek, Wyo. (Oct. 11, 1938)*	$0.92
Elk Basin, Wyo. (Oct. 11, 1938)*†	.90
Grass Creek, light, Wyo. (Oct. 11, 1938)*†	.90
Grass Creek, heavy (Oct. 11, 1938)†	.40
Lance Creek, Wyo. (Oct. 11, 1938)*	.77
Rock Creek, Wyo. (Oct. 11, 1938)*	1.00
Iles, light, Colo. (Oct. 11, 1938)†	.98
Iles, heavy, Colo. (Oct. 11, 1938)†	.92
Dutton Creek, Wyo. (Oct. 11, 1938)†	See note below
Frannie, light, Wyo. (Oct. 11, 1938)†	$0.55
Frannie, heavy, Wyo. (Oct. 11, 1938)†	.42
Hamilton dome, Wyo. (Oct. 11, 1938)†	.35
Midway, Wyo. (Oct. 11, 1938)†	See note below
Salt Creek Tensleep Crude, Wyo. (Oct. 11, 1938)†	$0.646
Salt Creek (Oct. 11, 1938)	See note below
Canon City, Colo. (Oct. 11, 1938)‡	$0.90
Florence, Colo. (Oct. 11, 1938)‡	.90
Cat Creek, Mont. (Oct. 11, 1938)‡	1.10
Big Muddy, Wyo. (Oct. 11, 1938)‡	.98
Lance Creek, Wyo. (Oct. 11, 1938)‡	.77
Lea County, New Mexico	See West Texas gravity schedule‡
Artesia, Jackson and Maljamar	See gravity table‡
Fort Collins and Wellington, Colo.	See note below
Eddy County, New Mexico (Oct. 11, 1938)‖	$0.77

*Ohio Oil Co. †Stanolind Oil & Gas Co. ‡Continental Oil Co. ‖Sinclair Prairie Oil Marketing Co.

Dutton Creek and Salt Creek Tensleep crudes start at below 29°, 86 cents, 2 cents spread up to 40° and over at $1.10. Salt Creek crude, excepting Tensleep, takes Standard Oil Co. of Indiana's Oklahoma-Kansas prices. Stanolind Oil & Gas Co., effective Oct. 11, discontinued posting prices in Greybull-Torchlight, Wyoming, and Hogback and Hospah, New Mexico. In Fort Collins and Wellington, Colorado, effective Oct. 11, 1938, by Continental Oil Co. 28-28.9°, 81 cents, with 2 cents added for each degree up to 40° and over at $1.05.

Eastern States

SOUTH PENN OIL CO.
(Effective Jan. 1, 1940)

Pennsylvania Grade oil in National Transit lines (Bradford field)	$2.75
Pennsylvania Grade oil in Southwest Pennsylvania lines	2.40
Pennsylvania Grade oil in Eureka Pipe Line lines	2.34
Corning grade oil in Buckeye Pipe Line Co. line (Nov. 4, 1939)	1.12

TIDE WATER ASSOCIATED OIL CO. and NEW YORK TRANSIT CO.
(Effective Jan. 1, 1940)

Bradford, Pa.	$2.75
Allegany, N. Y.	2.75

PENNZOIL CO.
(Effective Jan. 1, 1940)

Group A	$2.68
Group B	2.67
Group C	2.66
Group D	2.65
Group E	2.63

PURE OIL CO.
(Effective Jan. 1, 1940)

West Virginia	$2.34

QUAKER STATE OIL REFINING CORP.
(Effective Dec. 1, 1939)

Southern Ohio (Pa. Grade)	$2.30

Canada

ONTARIO
(Nov. 6, 1939, by Imperial Oil., Ltd.)

Petrolia	$2.10
Oil Springs	2.07
Both well	2.10

TURNER VALLEY
(Jan. 5, 1938, by Imperial Oil, Ltd.)

Clear naphtha and discolored naphtha, 65° and higher	$2.14
Discolored naphtha and crude oil, 40°-40.9°	1.14
Increasing 2 cents for each degree gravity with top price for 64°-64.9°	1.62

These prices f.o.b. producers' field tankage.

Rocky Mountain Runs

Production estimates for week ended January 27:

	Bbl.
WYOMING	
Salt Creek	15,570
Big Muddy	1,190
Byron	4,140
Dallas Derby	600
Elk basin	650
Frannie	3,150
Garland	2,570
Grass Creek	1,710
La Barge	1,060
Lance Creek	25,400
Lost Soldier	1,950
Medicine Bow	760
Oregon basin	2,450
Osage	600
Quealy dome	590
Rock River	2,630
Wertz	2,070
Miscellaneous	1,320
Total Wyoming	68,410
MONTANA	
Border	290
Cat Creek	480
Cut Bank	10,540
Dry Creek	740
Kevin-Sunburst	4,720
Pondera	950
Total Montana	17,720
COLORADO	
Florence	60
Fort Collins and Wellington	380
Wilson Creek	490
Iles dome	1,790
Moffat	320
Orchard	30
Rangely	70
Tow Creek	150
Price	410
Total Colorado	3,700
NEW MEXICO	
Cooper	3,050
Corbin	40
Eaves	680
West Eunice	160
Eunice	17,940
Halfway	80
Hardy	3,190
Hobbs	10,730
Jal	570
Langlie	4,430
Lynch	400
Lynn	760
Mattix	4,650
Monument	18,680
North Lynch	20
Penrose	4,340
Rhoades	40
Skaggs	80
Skelly	1,680
South Eunice	3,750
South Lovington	1,320
Vacuum	10,280
Artesia-Maljamar	15,080
Aztec-Bloomfield	10
Getty	100
Hogback	200
Rattlesnake	570
Table Mesa	100
Total New Mexico	102 930
Total Rocky Mountain region	192,760

Canadian Fields

(Continued from Page 74)

Tentative contract has been arranged with Drilling Contractors, Ltd., of Calgary, subsidiary of the Anglo-Canadian Oil Co. Location will be in the Camosun Creek area, a road into which is now being constructed by the province. Actual drilling is expected before the end of May. If oil is found in substantial quantities, the provincial government plans to construct a pipe line to the Pacific Coast. Three alternative routes are being studied, the shortest, 430 miles, reaching the coast at Kinsquit. An alternative 500-mile route north of the C.N.R. could cross the Peace Pass and deliver crude at Prince Rupert; while the longest line would follow the C.N.R. and have its terminus at Vancouver.

STANDARD OIL CO. OF CALIFORNIA AND UNION OIL CO.

Crude oil prices at the well effective June 22, 1936

(All gravities above those quoted take highest price offered in that field)

Gravity—	Signal-Hill (Long Beach)	Alamitos Heights	Seal Beach	Huntington Beach	Inglewood	Playa Del Rey	Olinda-Brea Canyon	Athens-Rosecrans	Dominguez	Elwood Terrace	Torrance	Richfield	Whittier East Coyote (La Habra)	Montebello	West Coyote Hills	Santa Fe Springs	Greeley Canal	Mountain View	Elk Hills, Buena Vista, Midway-Sunset, Lakeview	Lost Hills	Coalinga	Wheeler Ridge	Kettleman Hills
14-14.9	$0.80	$0.74	$0.79	$0.78	$0.79	$0.80	$0.76	...	...	...	$0.80	$0.76	$0.76	$0.77	$0.78	...	...	...	$0.70	$0.70	$0.70	...	...
15-15.9	.80	.74	.79	.78	.79	.80	.76	...	...	...	.80	.76	.76	.77	.78	...	...	...	.70	.70	.70	...	...
16-16.9	.80	.74	.79	.78	.79	.80	.76	...	...	...	.80	.76	.76	.77	.78	...	...	...	.70	.70	.70	...	...
17-17.9	.80	.74	.79	.78	.81	.80	.76	...	...	...	.80	.76	.76	.77	.78	...	...	...	.70	.70	.70	...	...
18-18.9	.80	.74	.79	.78	.84	.80	.78	...	...	...	.82	.76	.76	.77	.78	...	...	...	.70	.70	.70	...	...
19-19.9	.82	.74	.79	.82	.87	.84	.81	...	...	...	.85	.76	.78	.77	.78	...	...	$0.70	.74	.74	.71	$0.70	...
20-20.9	.85	.74	.79	.85	.90	.88	.84	...	...	...	.88	.78	.82	.77	.80	...	...	.70	.78	.78	.72	.70	...
21-21.9	.88	.74	.79	.89	.93	.93	.88	...	...	...	.91	.80	.85	.77	.84	.78	...	.73	.82	.82	.74	.70	...
22-22.9	.92	.74	.82	.92	.96	.98	.92	...	...	...	.93	.84	.89	.79	.88	.78	...	.77	.87	.86	.78	.72	...
23-23.9	.95	.77	.86	.96	.99	1.02	.96	$0.84	$0.79	...	.96	.88	.93	.82	.92	.78	...	.80	.92	.90	.82	.76	...
24-24.9	.99	.80	.91	1.00	1.02	1.06	.99	.88	.81	...	.99	.91	.96	.85	.96	.82	...	.84	.97	.94	.86	.79	...
25-25.9	1.03	.82	.95	1.03	1.05	1.11	1.03	.93	.83	...	1.02	.95	...	.89	.90	.86	...	.88	1.01	.98	.90	.83	...
26-26.9	1.06	.85	1.00	1.07	1.09	1.16	1.06	.98	.86	...	1.05	.98	...	.93	1.03	.90	...	.91	1.06	1.02	...	...	...
27-27.9	1.10	.88	1.05	1.11	1.12	...	1.10	1.03	.88	...	...	1.02	...	.97	1.06	.95	$0.91	.95	1.10	1.06	...	...	...
28-28.9	1.14	.90	1.10	1.14	1.15	F.O.B.	1.14	1.07	.90	...	...	1.06	...	1.01	1.10	.99	.94	.99	1.15	1.10	...	...	...
29-29.9	1.17	.93	1.15	1.18	1.18	our	1.17	1.12	.93	...	...	1.09	...	1.06	1.14	1.03	.98	1.02	1.20	1.14	...	...	...
30-30.9	1.21	.95	1.19	1.22	1.21	pipe	1.21	1.17	.95	F.O.B.	...	...	...	1.10	1.17	1.08	1.02	1.06	1.25	1.18	...	...	...
31-31.9	...	...	...	...	1.24	line	1.24	1.22	.97	ship	...	...	...	1.14	1.21	1.12	1.06	1.09	1.29	...	...	...	...
32-32.9	...	...	...	...	1.27	...	1.27	1.27	1.00	...	...	...	...	1.18	1.25	1.16	1.09	1.13	1.34	...	...	...	...
33-33.9	...	...	...	...	...	...	...	1.32	...	$1.28	...	...	...	1.22	1.28	1.20	1.13	1.17	1.38	...	...	...	$1.19
34-34.9	...	...	...	...	...	...	...	1.37	...	1.32	...	...	...	1.26	1.32	1.25	1.17	1.20	...	...	...	...	1.23
35-35.9	...	...	...	...	...	...	...	1.42	...	1.35	...	...	...	1.30	...	1.29	1.20	...	...	...	...	...	1.27
36-36.9	...	...	...	...	...	...	...	1.46	...	1.39	...	...	...	1.34	...	1.33	1.24	...	...	...	...	...	1.31
37-37.9	...	...	...	...	...	...	...	1.51	...	1.43	...	...	...	1.38	...	1.37	1.28	...	...	...	...	...	1.35
38-38.9	...	...	...	...	...	...	...	1.56	...	...	...	...	...	1.42	...	1.42	1.31	...	...	...	...	...	1.39
39-39.9	...	...	...	...	...	...	...	1.61	...	...	...	...	...	1.47	...	...	1.35	...	...	...	...	...	1.43
40-40.9	...	...	...	...	...	...	...	1.66	...	...	...	...	...	1.51	...	...	1.39	...	...	...	...	...	...
41-41.9	...	...	...	...	...	...	...	...	...	...	...	...	...	1.55	...	...	1.43	...	...	...	...	...	...
42-42.9	...	...	...	...	...	...	...	...	...	...	...	...	...	1.59	...	...	1.46	...	...	...	...	...	...
43-43.9	...	...	...	...	...	...	...	...	...	...	...	...	...	1.63	...	...	1.50	...	...	...	...	...	...
44-44.9	...	...	...	...	...	...	...	...	...	...	...	...	...	1.67	...	...	1.54	...	...	...	...	...	...
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Newhall, McKittrick, Kern River, Kern Front and Round Mountain, 70 cents for all grades. *Posted by Union Oil Co. Same company's Brea Canyon schedule stops at $1.14 for 28° and over, and Belridge and Lost Hills schedule stops at $1.32 for 37° and over. By Standard Oil Co., effective October 15: El Segundo, 14 to 18.9°, 80 cents; 19-19.9, 82 cents; 20-20.9, 85 cents; 21-21.9, 88 cents; 22-22.9, 92 cents; 23-23.9, 95 cents; 24-24.9, 99 cents; 25-25.9, $1.03; 26-26.9, $1.05; 27-27.9, $1.10; 28-28.9, $1.14; 29-29.9, $1.17; 30-30.9, $1.21. Wilmington, 14 to 16.9, 75 cents; 17-17.9, 77 cents; 18-18.9, 79 cents; from 19° upward, prices same as Signal Hill.

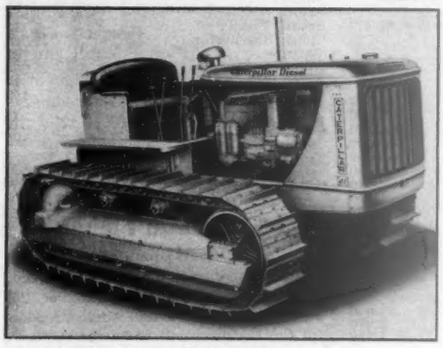
By Union Oil Co., Santa Paula, effective June 22, 1936: 21° and below, 70 cents; 22°, 72 cents; 23°, 76 cents; 24°, 79 cents; 25°, 88 cents. Orcutt, effective June 22, 1936: 17° and below, 70 cents; 18°, 72 cents; 19°, 74 cents; 20°, 77 cents; 21°, 80 cents; 22°, 83 cents; 23°, 86 cents; 24°, 88 cents; 25°, 91 cents; 26° and upward, 93 cents.

Effective October 1, 1939, Standard Oil Co. of California began posting prices in Cole's Levee and Richfield Western fields as follows: 27°, $1.00; 28°, $1.03; 29°, $1.06; 30°, $1.09; 31°, $1.13; 32°, $1.16; 33°, $1.19; 34°, $1.22; 35°, $1.26; 36°, $1.29; 37°, $1.32; 38°, $1.35; 39°, $1.39; 40°, $1.42; 41°, $1.45; 42°, $1.48; 43°, $1.51; 44°, $1.55; 45°, $1.58; 46° and over, $1.61.

New or Improved Equipment

Newest "Caterpillar" Tractor Is Designed to Spur Production

Caterpillar Tractor Co., Peoria, Ill., has announced a 75-drawbar hp. diesel D7 tractor, engineered specifically to increase production and lower operating costs. Fea-



tures which lessen the energy expended by the operator enable the driver to get the greatest amount of work out of the new machine. Improvements in design and construction are said to give the tractor longer life and to lower upkeep costs.

The new D7 tractor has "finger tip" steering. A light pull on the steering-clutch lever is sufficient to steer the 23,500-pound machine. Actually, the only work done by the operator is the opening of a valve, as the steering clutches are operated hydraulically by a separate control unit driven from the upper transmission shaft. This low-effort steering helps the operator to keep alert during his entire shift.

A streamlined hood and driver's seat located high and well forward on the tractor give a clear view of the work ahead and behind, eliminating the need for neck stretching and leaning.

A restful and durable seat is wide, so the operator can change positions, further adding to his comfort. Small seats on both the left and right-hand arms of the main seat provide a comfortable place from which the driver can operate rear-power-controlled equipment.

Heads Dallas Petroleum Club

F. I. Brinegar, vice president of Continental Supply Co., has been chosen president of the Dallas (Tex.) Petroleum Club. Mr. Brinegar, who has been active in the club's affairs for several years, has just finished a term of service as secretary-treasurer. William D. McBee, Westmount Oil Co., was named vice president, and Elmer F. Schmidt, Lone Star Gas Co., secretary-treasurer.

Four new directors named at the annual membership meeting are: Bruce C. Clardy, Heyser-Heard & Clardy, Inc., John G. Pew, Sun Oil Co.; Charles D. Turner, attorney, and Frank I. Brinegar. C. A. Young is the retiring president and J. B. Cowden the retiring vice president.

Lane-Wells Holds Sales Meeting

The general officers and division executives of Lane-Wells Co. held their annual general sales meeting in Los Angeles, Calif., recently. Rodney S. Durkee, president, said operations for 1940 would include construction of new field units for gun perforating and Electrolog. Under the direction of M. E. Montrose, general sales manager, the 1940 sales campaigns for each of the company's divisions were set. Representing the Gulf Coast division were Morton T. Higgs and J. D. Hughes, division manager and sales manager respectively, in Houston, Tex. R. B. McCullar, division manager, and Charles T. Casebeer, sales manager, represented the Mid-Continent division. J. W. McPhee, division manager, and D. M. Anderson, sales manager, represented the California division. Mr. Durkee and Mr. Montrose left on a tour of Mid-Continent branches of the company.

Byron Jackson Wins Patent Suit

Byron Jackson Co. won its suit in a decision by Judge Colin Neblett of the U. S. District Court in Santa Fe, N. M., against Malcolm E. Self and the Harry Bass Drilling Co., of Hobbs, N. M., alleging infringement of five patents. The defendants added to the plaintiff's patented oil-well tongs a jaw which adapted them for use on sizes of pipe for which they were not manufactured. Judge Neblett enjoined the defendants from engaging further in the practice. The court indicated that Byron Jackson Co. was within its patent rights in determining for what particular sizes of pipe its tongs were designed.

Ethyl Office Opened in Seattle

Ethyl Gasoline Corp. has opened a Seattle, Wash., office, establishing a separate division for the Northwest, comprising Washington, Oregon, Idaho, Utah, Montana and Wyoming. Harry Kuhe, formerly assistant manager of the Tulsa division, has been appointed manager of the new Seattle division. Fred Naylor, formerly of the Chicago division, has been appointed assistant division manager.

Robinson Widening Totco Service

James V. Robinson, sales manager of Technical Oil Tool Corp., Ltd., Los Angeles, Calif., is now in Houston, Tex., enlarging the direct factory representative and service organization. The plan being put into operation by Mr. Robinson will result in zone headquarters being established at a centrally located point in each active drilling area. Recorders for controlled vertical drilling will be delivered to jobs from the zone headquarters, and any necessary service will be given by a factory-trained Totco representative who has studied conditions and drilling practices in his particular area. Mr. Robinson will be in Houston until the last of February.

J. F. Lincoln on Speaking Tour

J. F. Lincoln, president of the Lincoln Electric Co., is on a speaking tour that includes 12 principal cities in the southern, southwestern, and western parts of the country. The first engagement was as guest speaker at the annual banquet of the Charlotte Engineers Club of Charlotte, N. C. His subject was "Government Is Made for Man, Not Man for Government." Mr. Lincoln urged the value of personal initiative, his belief in which is illustrated by the Lincoln Foundation, which rewards individuals for personal study of the possibilities of arc welding. Other cities on Mr. Lincoln's itinerary are Birmingham, Ala.; New Orleans, La.; Houston, Tex.; Los Angeles and San Francisco, Calif.; Portland, Ore.; Seattle, Wash; Pueblo and Denver, Colo.; Salt Lake City, Utah, and Chicago. He expects to return to Cleveland by February 17.

Promotion for R. C. Armstrong

R. C. Armstrong, III, formerly city representative for Texasteel Manufacturing Co. in Fort Worth and Dallas, Tex., has been transferred to Houston, Tex.,

R. C. ARMSTRONG, III *E. S. HUDSON, JR.*

as sales manager in the Gulf Coast area. Mr. Armstrong's promotion is part of an expansion program of the company's sales force. He will be assisted by E. S. Hudson, Jr., formerly with Huasteca Petroleum Co., subsidiary of Standard Oil Co. of New Jersey, in Mexico.

Henderson Made Sales Manager

McEvoy Co., Houston, Tex., has made A. (Scotty) Henderson vice president and sales manager. The appointment is part of the McEvoy expansion program designed further to improve relations with McEvoy customers. Long identified with McEvoy in various capacities, Mr. Henderson is thoroughly familiar with all phases of the use of completion equipment. His knowledge of problems encountered in the field, together with unusual familiarity with McEvoy equipment, gained through years of experience as plant superintendent and vice president in charge of production, is expected to be of great assistant to the buyer of oil-field equipment.

Dill Now Export Representative

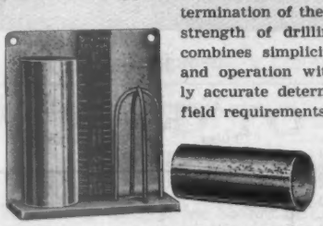
New export offices in charge of A. A. Dill have been established by Jensen Brothers Manufacturing Co. at 1850 Hudson Terminal Building, 50 Church Street, New York. The cable address of the company is "Axelson." Mr. Dill in his new post will look after the sale of Jensen pumping units and rod-line jacks in oil fields of other countries.

Booklet Pictures Pipemaking

National Tank Co., 3100 Sand Springs Road, Tulsa has prepared for distribution a booklet, "Armco National Surface Casing," which shows by a series of pictures the various stages in the manufacture of this pipe. The booklet, designated as Bulletin 75, is printed in green and black on white paper. Of interest to superintendents, engineers, and purchasing agents is a compilation of useful information, including freight rates, number of joints of different sizes for the minimum carload requirements, as well as sizes, gages, etc.

Baroid Shearometer Simplifies Job of Testing Drilling Mud

The Shearometer, introduced by the Baroid Sales Department, Los Angeles, Calif.; Houston, Tex., and Tulsa, is an A.P.I.-approved instrument for the field determination of the shear or gel strength of drilling fluids. It combines simplicity of design and operation with sufficiently accurate determinations for field requirements.



The Baroid Shearometer set, as illustrated, consists of two 5-g. Shearometer tubes, a direct-reading scale, and a holder. Two Shearometer tubes are included, so that two determinations may be made without having to clean and dry each tube after every test.

The shear or gel strength is determined in terms of force per unit area. Consequently the scale is calibrated to read directly in pounds per 100 sq. ft. in a range from 3.0 lb. per 100 sq. ft. to 60.0 lb. per 100 sq. ft. with a 5-g. Shearometer. To run a test it is merely necessary to place the Shearometer gently on a quiescent surface of the mud sample and allow it to sink vertically until it comes to rest. The depth of the penetration then is measured on the scale and the gel strength is read directly in pounds per 100 sq. ft.

Broggini Pacific Coast Manager

E. B. Badger & Sons Co., Boston, Mass., chemical and petroleum engineers, have appointed A. J. Broggini manager of its Pacific Coast division, with offices at 111 Sutter Street, San Francisco, Calif. Mr. Broggini is a graduate of the University of Michigan in chemical engineering. Before joining the Badger sales engineering staff, he was with Industrial Rayon Corp., Sun Oil Co., and Edeleanu Co., Ltd. Much of his experience with the Badger organization, which he joined several years ago, has been in connection with solvent refining, dewaxing, and the Houdry process. He has spent some time in other countries in connection with the design, construction and operation of Badger-designed units, perhaps the most notable one being the large Edeleanu plant recently completed at Aruba, Dutch West Indies.

Yetman Oversees Tulsa Division

Irl Yetman, formerly stationed in Oklahoma City, Okla., for Dearborn Chemical Co., Chicago, has been transferred to Tulsa, where, with offices in the Midco Building, he is in charge of the Tulsa division. Assisting him are Myrl Haltom, in Oklahoma City, and Jack Riley, in Tulsa. George W. Massen, who represented the company in the Kansas City, Mo., and Tulsa territory for 24 years, has retired from active service.

Here and There With Men Who Manufacture Equipment

L. A. Mullen has been appointed assistant manager of sales for Pittsburgh Steel Co., Pittsburgh, Pa. Mr. Mullen has been with Pittsburgh Steel since January 1938, first as assistant district sales manager in New York and later as district sales manager in Chicago. For 10 years he was associated with Republic Steel Corp. in various sales capacities.

L. D. Hilton, sales manager for Rector Well Equipment Co., Fort Worth, Tex., has returned from a trip to Los Angeles, Calif., where he spent the holidays with his family. W. P. Knight, Midland, West Texas representative, spent the holidays in Brownsville, Tenn.

Emil Opferkuck, sales manager of the Superior Engine Division of National Supply Co., Springfield, Ohio, for the past 20 year, has resigned because of ill health. He will take an indefinite rest, and has made no plans for the future.

Texoma Supply Co., Tulsa, has opened a district sales office in the West Building, Houston, Tex., with Harry H. Swan as district sales manager.

Pittsburgh Screw & Bolt Corp. has appointed Harry W. Schuetz assistant to the president and general manager of the Colona division. Mr. Schuetz was for many years superintendent of the Pennsylvania Works of the National Tube Co. He has been with Pittsburgh Screw & Bolt 15 years.

Trade Literature

INTERNATIONAL NICKEL CO., 67 Wall Street, New York.—Review of nickel industry in 1939.

GENERAL ELECTRIC CO., Schnectady, N. Y.—Bulletin GEA 3330, insulation for polyphase induction motors; bulletin GES-2377, electrical heat in industry.

WALTER O'BANNON CO., Box 2477, Tulsa.—Current issue Between Calls.

TEXAS CREOSOTING CO., P. O. Box 131, Orange, Tex.—Bulletin "Black Beauty" products.

MACWHYTE CO., Kenosha, Wis.—Bulletin, two scraper ropes, regular lay and lang lay.

CENTRAL FOUNDRY CO., 386 Fourth Avenue, New York.—16-page booklet, Solus oil and gasoline separator.

INGERSOLL-RAND, 11 Broadway, New York.—Bulletin, "The Motor Pump in the Bulk Station."

CARBOLOY CO., INC., Detroit, Mich.—Engineering data sheet 72 "Carboloy Recommendations for Machining Ampco Metal."

MEEHANITE RESEARCH INSTITUTE OF AMERICA, INC., 311 Ross Street, Pittsburgh, Pa.—Bulletin 10, "Meehanite, the Metal for Pressure Castings."

FOXBORO CO., Foxboro, Mass.—Bulletin 241, Foxboro-engineered time and sequence systems for automatic process operation.

RELIANCE ELECTRIC & ENGINEERING CO., Ivanhoe Road, Cleveland, Ohio.—Bulletin 220, explosionproof direct-current motors, Type T.

Portable Rig Co., Houston, Tex., has established a sales and service branch in Odessa, Tex.

Simplex Emergency Jack Has Features of Larger Model

Templeton, Kenly & Co., 1020 South Central Avenue, Chicago, have placed on the market a light-weight single-acting, automatic raising and lowering emergency jack, designated No. 522. It is identical to the Simplex No. 310A emergency jack, which has 15-ton capacity, except that it is proportionately smaller and has a capacity of 5 tons, meeting the demand for a smaller emergency jack with all the features of the larger jack.

The No. 522 tilts on its base, when the base pawl is disengaged, permitting angular jacking or pushing and pulling. This feature was originated by Templeton, Kenly & Co. and is built into the company's emergency jacks and pole pulling and straightening jacks.

The jack lifts on the cap, the auxiliary shoe, the toe lift and at any intermediate point by using the 4½-ft. 7/16 BBB chain, fitted with a grab hook, as a sling. It has a large strong inner-ribbed base, a louble lever socket for operation in close quarters and the toe lift is machine corrugated.

He'll Spend $45,000,000 in 1940

Fred E. Haker, who in 1900, when a farm boy of 18, joined the Allis-Chalmers Manufacturing Co. as a stenographer, has been appointed general manager of purchases, in which capacity he will spend about $45,000,000 this year. When Mr. Haker, now white-haired and genial, went to the company 40 years ago he and two other men composed the purchasing department. Today it employs more than 100 persons.

In the coming year, under Mr. Haker's direction, an average of 600 purchases a day will be considered, analyzed, and placed with some 7,000 different firms. He knows personally most of the representatives of these firms.

BETHLEHEM-INTERNATIONAL SUPPLY CO. MEN MEET

The first annual managers' meeting of Bethlehem-International Supply Co. was held in Tulsa January 18-20, upon call of G. A. Thompson, executive vice president and general manager. R. G. Ayers, manager of sales, presided over the 3-day session, which was attended by sales managers, division managers, and district managers from throughout the Mid-Continent territory.

Those in the picture, front row, are: H. A. Wilson, Roy E. Kunde, both Tulsa; R. L. Neal, Wichita, Kans.; Ford Carman, J. B. Wrigley, R. G. Ayers, G. A. Thompson, all Tulsa; I. H. Salter, Houma, La., and W. T. Davis, Seminole, Okla. Standing: C. J. Seger, Jr., Roy E. Dow, W. F. Taylor, William Chapman, all Tulsa; C. C. Crider, Houston, Tex.; V. W. Bailey, H. M. Cooley, both Tulsa; R. A. Brown, Corpus Christi, Tex.; Charles Chapman, Wichita Falls, Tex.; W. M. Sanders, J. H. Ihrig, both Tulsa; Marvin W. Bass, Shreveport, La.; H. R. Powers, W. J. Brady, W. B. Cotton, A. W. Tarkington, all Tulsa.

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LEASES—East Texas, La., South Ark. 20 acres up, dollar acre up.—Owners—Address Attorney, Box 1122, Little Rock, Ark.

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only
A complete SERVICE EXPERTS in every department of the Oil Business at your SERVICE a REAL SET-UP. The best opportunity ever offered you. Leases in large or small lots at
WHOLESALE PRICES
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SACRIFICE 40-acre Oil Lease, Chaves County, for only $10.00, full price. Guarantee title. P. O. Box 191, Clovis, N. Mex.

FOR SALE Oil and gas leases and small production located in Kentucky shallow field, and leases located in Clay County, Tenn. Have for sale two tracts of proven Fluorspar and Zinc deposits; reports furnished on request. W. P. Harley, Bowling Green, Kentucky.

CHAVES COUNTY, NEW MEXICO
Subdividing 160 acres in tracts as small as 2½ acres. Share in oil, gas and minerals under larger tract. A favorable report by reputable engineer furnished. Write for information. HARRY S. WRIGHT, Wright Building, Farmington, New Mexico.

WATCH GEORGIA—Drilling—Showings oil and gas. For information write C. W. Deming, Reg. Dealer, Waycross, Georgia.

THE
OIL PROPERTIES EXCHANGE
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Tulsa, Oklahoma
We have for sale many oil and gas properties, complete reports, various sizes, various states, also Royalties, Drilling Blocks, Oil Payments.
Write us
If you want to BUY or SELL a property.

FOR SALE: 120 acres in Taylor County, Texas; located Bowles Pool. Address Box K-460, The Oil and Gas Journal, Tulsa, Oklahoma.

ATTENTION Brokers and Salesmen, 3,000 acres Forest City Basin. Direct offset Oil and Gas production. Will deal leases or assign with completed well. Write H. B. Snyder, Box 126, Ottawa, Kansas.

NEW MEXICO WEEKLY OIL REPORT.
Send for sample copy.
BOX 968, HOBBS, N. M.

WANTED: Good production up to 500 bbls. In any field or state. By Individual, not for brokerage. E. KAUFMAN, Box 1524. Tulsa, Oklahoma.

ARIZONA GOLD MINE. 40,000 tons ready to mill, Assays $24 per ton. Near big producers. Need equipment. Will sell 10% interest in Lease-Option for $3000. Address Box K-475, The Oil and Gas Journal, Tulsa, Oklahoma.

PROPOSITION of merit offered by driller owning drilling equipment to investor with $67.50. P.O. Box 550, Muskogee, Okla.

KENTUCKY
We represent two corporations owning approximately sixty thousand acres of mineral lands in Laurel, Whitley, and McCreary Counties. Tracts vary in size up to five thousand acres. Owners are interested in leasing or selling all or part of their holdings.
DOLLE, O'DONNELL & CASH
3715 Carew Tower, Cincinnati, Ohio.

Leases and Drilling Blocks

DRILLING BLOCK for sale, leases and royalties in Hamilton County, Illinois. Write George W. Hogan, Jr., McLeansboro, Illinois.

OWN A LEASE in this new oil field, big discovery well just in. Box 24, Silverdale, Kans.

ILLINOIS' ONLY OIL REPORT
Twice-weekly. Every detail of every test Illinois and Indiana.
3rd year. C. I. O'Neill, Effingham, Ill.

OWNER obliged to sacrifice for cash all or part of 2240-acre drilling block vicinity of seven structures area, Chaves County, N. M. Make offer. Box 9156, Sta. S, Los Angeles, California.

CASH paid for producing gas or oil wells, in any state. Describe fully. 8235 Marmont Lane, Hollywood, California.

STOP — CONSIDER, Why not gamble where you have a CHANCE? Join worker. $125.00 required. Investigate. Box K-470, The Oil and Gas Journal, Tulsa, Okla.

WIDOW will sell half her 12½% royalty ahead of drill two tracts oil on four sides, drilling within ninety days. Box 21. Leon, Kansas.

WELL LOGS. Drillers' logs of approximately 4,000 wells drilled in New Mexico are available from Well Log Division, New Mexico Bureau of Mines & Mineral Resources, Socorro, New Mexico. Write for price list C.

FOR SALE—Oil and gas lease, Nowata Co., Okla., 200 acres, 11-27-14 and 12-27-14. Three wells; equipment all good; large volume of gas. New location should make 50 bbl. Ideal for repressuring. First man here with $2,000 gets it. M. J. Regan, Coffeyville, Kansas.

Mailing Lists

ROYALTY Lists. Oil Investor Lists. Stockholders Lists. By states. Oil Industry Mailing List Co., Tulsa Loan Bldg., Tulsa Oklahoma.

Survey Service

REMEMBER EAST TEXAS
When all other methods fail, employ my divining or dowsing method. If oil exists this method finds it. Faults, broken treacherous areas accurately defined. Our Watson #2, first producer Wilmington, Calif. field, located by this method. More reliable than mechanical geophysics. Ask any unbiased oil authority. Many years experience. A wise man investigates. George Miller, 1548 Post, Torrance, Calif.

Help Wanted

SITUATION OPEN — California. Required by prosperous independent company (producing, refining, marketing) energetic and vigorous administrative executive. Strong background of commercial experience in oil industry essential and knowledge of at least one branch of operators activities. Good opening for selected candidate. Apply stating experience, reference (copies only) as to character and ability, salary expected to Box K-451, The Oil and Gas Journal, Tulsa, Oklahoma.

WANTED
OIL FIELD BLACKSMITH
Write D. F. Mitchell, Shelby, Montana.

WANTED—Recent Petroleum Engineering graduate with oil producing lease experience for position as draftsman and later repressuring field man with North Texas consulting firm. Give age, education, detailed experience, picture, salary expected, and references. Address Box K-472, The Oil and Gas Journal, Tulsa, Oklahoma.

WANTED—A good employer, by a reliable middle aged gentleman, married, experienced in any department of an oil or supply company, field or office work. Like hard work and long hours. Box K-476, The Oil and Gas Journal, Tulsa, Okla.

Situations Wanted

MECHANICAL Engineer, at present employed as production engineer, has four years of extensive oil field experience. Desires a position in sales engineering. No preference in location. Box K-461, The Oil and Gas Journal, Tulsa, Oklahoma.

REFINERY SUPERINTENDENT, ENGINEER. Capable and experienced in the operation, maintenance and construction of all modern refining operations. Considerable management background with excellent record. Technically trained. Address Box K-474, The Oil and Gas Journal, Tulsa, Oklahoma.

MATERIAL Man with several years of experience pricing, inventorying and purchasing oil field supplies and equipment, also have done some selling and accounting in other lines. Available on short notice. Address Box K-473, The Oil and Gas Journal, Tulsa, Oklahoma.

COMPETENT, successful Manager: For Oil Company, Drilling Contractor or extensive oil interests. 20 years' experience. If your operations are not showing sufficient profit write P. O. Box 134, South Pasadena, California.

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We buy and sell Royalties.
All offerings meet S.E.C. requirements.
CHESTER IMES
Tulsa Loan Bldg., Tulsa, Oklahoma.

ROBERT L. KINKAID, INC.
Tulsa Loan Bldg.
Tulsa, Oklahoma.

ROYALTY in SW 30 and SW 32-18-14 near Magnolia test; good title. A. G. Clewell, Box 99, Watonga, Oklahoma.

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Looking for U. S. or State Geologic Surveys, or other government publications? Write Cornwall's Book Store, 723 Eleventh Street, Northwest, Washington, D. C. Unusually large stock.

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Oil Industry Printing

OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press. 215 East Third St., Tulsa, Okla.

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Crude Oil—Diesel Oil—Bunker C
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CHARTERS — Delaware best, quickest, cheapest, more liberal. Free forms. Colonial Charter Co., Wilmington, Del.

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South Florida Ranch and Vegetable Lands; 12 months' growing season; amazingly rich land; set to improved grasses will carry at least 1 head to each 3 acres; in large blocks $2.50 to $3.00 an acre; market active.
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	1 time	2 times	3 times	4 times
3 Lines	$1.05	$1.80	$2.55	$3.30
4 Lines	1.40	2.40	3.40	4.40
5 Lines	1.75	3.00	4.25	5.50
6 Lines	2.10	3.60	5.10	6.60
7 Lines	$2.45	$4.20	$5.95	$7.70
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9 Lines	3.15	5.40	7.65	9.90
10 Lines	3.50	6.00	8.50	11.00

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This space may be contracted for over a period of one year from the date of the first insertion and is PAYABLE IN ADVANCE, MONTHLY.

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THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

CLASSIFIED ADVERTISING

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"Motor Sale" using LUBRICATING GAS-O-LINE

AND SAVE

3 to 6c on GASOLINE. 25 to 40% Motor Expense. Original and Genuine lubricating Anti-Knock Additive. Mixture makes cheap GASOLINE good, and high-test Gasoline better, or highest powered Gasoline on American Market. Prove it for yourself. Introductory Delivered Price 99c on $2.50 package. Responsible Dealers Wanted.

LUBRICATING GASOLINE CO., HOUSTON, TEXAS

FOR SALE: Bartlesville Warehouse—3300' New & 2600' used 1¼" 2.731# Butt Weld Reading Wrot Iron Tubing. I.T.I.O. Company, Bartlesville, Oklahoma.

---

25 K.W. and 40 K.W. Gas Engines, 220 volts, D.C. Two 100 K.W. Gas Engine-Generator Sets, 220 volts, D.C. 7x6 Ingersoll-Rand ER-1 Air compressor. Six-inch Outer Pipe Threading Machine. Also large stock of lathes, pipe machines, milling machines, etc. Send for our list.

Terms to suit.

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26 West 2nd St. Cincinnati, Ohio

FOR SALE: Odessa, Texas, Used handling equipment for 3½" flush joint drill pipe, including, elevator, tong heads, slips, W-K-M lower drive and miscellaneous subs and short drill collars. 50% discount.

LUCEY PRODUCTS CO.
Tulsa, Okla.

NOTICE — CABLE TOOL CONTRACTORS, Save money; used wire lines. All sizes up to 5,000 ft. long. See us before you buy. General Tool & Supply Co., P.O. Box 4387, Oklahoma City, Oklahoma.

TRACTORS

Government crawler type Caterpillars, 5 ton $375, 10 ton $695, Slightly used. Perfect condition.

O. C. EVANS
Mt. Sterling, Ky.

FOR SALE—Brown Recording Pyrometer, double dial, indicating and recording. Range 75-F 800 F, 30 day chart, Warren 110 volt electric clock. Warner-Lewis Co., Tulsa, Oklahoma.

FOR SALE: O. C. Whse.—6700 Ft. 2" 10 Thd. 4.6# used insert seamless tubing C-45—I.T.I.O. Co., Bartlesville, Okla.

1—26' x 190' x 10' All steel sectional building, good condition.

4—All steel sectional T-shape hangars 44' span. For information call, 3-8553 Tulsa, 2-5196 Oklahoma City, Capital 2825 Houston.

WE buy and sell machine shop equip't. Write Barrett Machinery Company, Box 4516, Oklahoma City, Okla., for stock list.

FOR SALE: Oklahoma City Warehouse—4600' new & used 1½" 11½ Thd. 2.75# Regular C-45 S.S. Tubing. I.T.I.O. Company, Bartlesville, Oklahoma.

FOR SALE

10,000 Ft. 7", 24# seamless casing, once run
5,000 Ft. 7", 26# seamless casing, once run
10,000 Ft. 2⅛" seamless tubing, used for flowing wells only
10,000 Ft. 8" line pipe
10,000 Ft. 6" line pipe
10,000 Ft. 2½" line pipe

Also the above is threaded and collared, strictly No. 1, located in Shreveport, Louisiana.

We also have 30,000 Ft. of 6" screw line pipe in Oklahoma.

Wire, Write Or Phone for Prices

Louisiana Iron & Supply Co.
Shreveport, Louisiana

FOR SALE—8,000 ft. 4½ o.d. 10-lb., 4,500 ft. o.d. 7-lb., 2,500 ft. 4 o.d. 12-lb., all seamless. No one, double lengths, take all 12½ cents.

M. J. REGAN, Coffeyville, Kansas.

1—37½-H.P. Fairbanks-Morse oil engine.
1—25-H.P. 2-cycle Superior gas engine.
11—40-H.P. 2-cycle Superior gas engines.
2—1,000-watt Ready Power International Type AH 12 A.C. electric plants.

All above complete. Ready to run. Nolan Sales Corporation, Tulsa, Okla.

FOR SALE: Orifice and Positive Gas Meters. GEO. R. MILNER, Okmulgee, Oklahoma.

FOR SALE—$80,000.00 Rotary Rig complete. 10-in. Emsco Unit, 125-350 Boilers, etc. Practically new. Bargain. Roberts Bros., Box 1726, Houston, Texas.

EMERGENCY NEEDS?

Freight Cars; any kind
Locomotives; all types
Relaying Rails
Freight Car Repair Parts

Perhaps *we* can supply your requirements, and *immediately?*

OTHER MACHINERY and EQUIPMENT, TOO!

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"Anything containing IRON or STEEL"

REFINERY FOR SALE—complete 3000 bbl. refinery, cracking and skimming plant, practically new, dismantled and ready for shipping, at sacrifice price. Louisiana Iron and Supply Co., Phone LD 21, Longview, Texas.

EQUIPMENT FOR SALE

2—Used Full Electric Diesel Powered Drilling Rigs—complete with Drill Pipe.
1—Used Electrical-Mechanical Diesel Powered Drilling Rig—Less Drill Pipe.
1—Used Complete Large Steam Drilling Rig.

All in first class condition. For inventory and Prices call or write

K. S. RICHARDS
P. O. Box 830 Ph. 2-1161 Fort Worth, Tex.

FOR SALE: 7 Ft. x 20 Ft. Butane welded storage tanks 125# WP, capacity 6000 gallons. I.T.I.O. Co., Bartlesville, Okla.

FOR SALE—50-H.P. Muncie semi diesel engine, good condition, $350.00.
M. J. REGAN, Coffeyville, Kansas.

For Sale—Equipment

Gasoline Plant Equipment For Sale

1—5' x 16' S.W. Evaporator 40# W.P.
1—9' x 4½' Graver Water Filter.
1—8' x 40' Tulsa Type Bubble Tower.
1—49" x 12' S.W. Reflex Tower.
2—96" x 34' S.W. Bubble Towers.
2—7 x 7 Graver Water Softeners.
1—30' x 40' x 12' Sectional Steel Bldg.
1—4 x 6 Fairbanks Morse Duplex Pump.
Clark, Bessemer, Ingersoll-Rand, Miller Compressor Cylinders from 6" to 26".
Located at our Seminole, Okla. Store.

Nolan Sales Corporation, Tulsa, Okla.

FOR SALE AT BARGAIN PRICES for cash:

In Wyoming:
1—#4 Special Buckeye Ditcher.
1—110-gallon Tar Kettle.

In KMA Texas field:
1—250-gallon Tar Kettle.
1—#36 Buckeye Ditcher.

At Odessa, Texas:
1—#4 Buckeye Ditcher.
1—Ten-Twenty McCormick Tractor with live boom.

At Oklahoma City:
1—#35 Buckeye Ditcher.
1—250-gallon Tar Kettle.
1—McCormick Deering Tractor 6-40 with live boom.
1—110-Ft. Air Compressor.

Contact
LEE CURRY, 302 Key Bldg., Phone 7-7636
Oklahoma City, Okla.

Equipment Wanted

EQUIPMENT WANTED

Refinery complete less storage, prefer 200-300 barrel cracking unit, or combination cracking and skimming unit. Plant must stand investigation and be priced right.
BOX 425, LUSK, WYOMING.

Financing

CAPITAL SEEKERS

Put your project before 200 Key-Men. Cost trifling. Details free. AMSTER LEONARD, Fox Theater Building, Detroit, Michigan.

JOHN MORRIS, Box 5411, Philadelphia studied records 5000 financial houses. Found only 191 buy new issues. $4.00.

For Sale—Maps

TEXAS and NEW MEXICO
UP-TO-DATE OIL DEVELOPMENT MAPS
Zingery Oil Map Co., Fort Worth, Tex.

R. B. ROBINSON MAPS

Jackson, Miss. 3-Hart Bldg., Across Street from Heidelberg Hotel. Ownership maps All Over Mississippi.

Real Estate

FOR LEASE—Five to 10 years, shop now being used by Hydril Co.: two or more acres, all steel building with 15-ton crane, trackage, office building, all utilities, etc. Available April 15.

M. R. DUCEY, Owner
309 Webster, Houston, Texas

Louisiana's Potash Field

(Continued from Page 15)

dome, drilling in the river is in prospect. This, however, considering the navigation on the river, will entail complications and necessitate special permits and procedure.

Exploration at Potash was started in 1937. In that year upwards of 35 tests were drilled. With one exception, a test drilled to 10,027 ft., all were shallow, being confined mainly to the cap-rock area overlying the dome. One of these wells was completed in a shallow sand as a small pumper, but this production proved short lived.

First commercial production was opened the past year with the discovery of deep sands flanking the north and northeast sides of the dome. Three deep wells have been completed so far with depths of sands ranging from 7,900 to 8,100 ft. Production apparently is from two sands. Another deep test started since the completion of those wells drilled through more than 2,000 ft. of salt, proving the existence of a salt overhang. It, however, was abandoned because of formational and mechanical trouble before getting down to the sands.

One rig has been kept running in the field. This is a diesel-electric-powered assembly permanently mounted on two large submersible barges, one containing the drilling equipment and the other the power plant. Well locations are in dredged canals which are being extended around the dome as additional wells are drilled.

As the field is subject to inundation by river overflows, wells are completed with christmas trees elevated from 12 to 15 ft. above normal water level in the canals, placing them safely above the high-water level of the river. The extended casing is enclosed and braced by a piling-supported structure which protects the wells from the swift currents and debris during floods. Overlying the top of the dome, around which the deep wells are being drilled, elevation of the land is sufficiently high in places that field storage and separators, and a pump station erected there are above flood levels. Piling-supported walkways connect the wells with this high ground.

Illinois Pipe-Line Permit

SALEM, Ill.—The Shell Pipe Line Corp. has been granted a permit to lay a line under State Aid Route 4, 2 miles south of Odin, Ill., by the Marion County Board of Supervisors, at Salem.

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